The UK's best-selling Apple magazine

Mac FORMAT

› Issue 371 › November 2021
› macformat.com › @macformat

iPhone 13: the verdict

› Why Apple's latest is a must-have upgrade

SUPERGUIDE

ON TEST

iPad mini

› 8.3-inch display › A15 Bionic › All-new design

Win!

› ViewSonic's incredible 4K display, worth **£549**

macOS Monterey

› Your in-depth guide to all the new features

How to...

› Run a virtual machine
› Master Spatial Audio
› Use layers in photos

Apple Mail masterclass

› Tame your inbox – we show you how

Happy 20th birthday, iPod!

› Celebrate Apple's iconic media player

Mac | iPad | iPhone | Watch | iCloud | Music | Photos

VISIT…

IF I HAD SOMEWHERE TO LIVE...

I COULD GO ANYWHERE IN LIFE

When Abi's mum died, life got tough. She didn't get on with her dad and the arguments became violent. Abi felt her only choice was to leave home. With just the clothes on her back, and no idea where to go, she ended up sleeping on the streets in the freezing cold.

Right now, you could give a homeless young person like Abi somewhere to start their future

Abi's life changed when she was given a room at Centrepoint. A safe place to sleep and recover. A place to develop the skills and confidence she needed to rebuild her life – and leave homelessness behind for good. Now, Abi believes she can go anywhere.

Thousands of homeless young people like Abi are desperately trying to find their place in the world – but first they need a place to start again. **You could help right now by sponsoring a room at Centrepoint for just 40p a day.**

We know this support changes lives. 88% of the young people we help move on positively in life. So please, help someone like Abi today. Thank you.

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Or complete and return the form below

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Bank Sort Code: ☐☐-☐☐-☐☐ Account Number: ☐☐☐☐☐☐☐☐

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Your name and address are needed to identify you as a current UK taxpayer.

Your donation will go towards funding Centrepoint's vital work with young people all year round providing accommodation and support. We sometimes use models and change the names of the young people we work with to protect their identity; however all stories are true and as told by the young person.

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Thank you for donating to Centrepoint today.

We'd love to show the impact of your support and share how young people continue to need your help, through newsletters, fundraising appeals and information about events. Please let us know how best to stay in touch with you by adding your details above, and ticking the relevant boxes:

☐ **Please contact me by email** ☐ **Please contact me by phone**

Last year our supporters helped us change the lives of over 15,000 homeless young people. By letting us know we can count on you, we can continue helping young people with a home and a future.

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We promise never to sell or swap your details, and will always keep them secure. You can view our Privacy Notice in full at www.centrepoint.org.uk/privacy. You can opt out of post and change how we communicate with you at any time. Please call **0800 232320** and speak to one of our friendly team or email **supportercare@centrepoint.org** to do this and ask us any questions.

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centre point give homeless young people a future

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Hopefully, you'll have read our 'Get ready for macOS Monterey' guide last issue and prepped your Mac... (If you missed it, turn to p76.) This issue, we're taking you through all the changes and improvements in the latest OS update so that you can hit the ground running and make the most of the new features. Turn to p20 to gen up and get started.

Aside from the new free desktop upgrade, did Apple's September event bring all that you had hoped for in terms of new Apple kit? While the changes in the new iPad 10.2in are fairly incremental, the iPad mini has had quite the makeover. And, among many other improvements, Apple has again pushed iPhoneography up a notch with the iPhone 13 Pro. Check out our Apple reviews starting on p78.

We're also getting into the party spirit this issue and wishing the iPod a happy 20th birthday (p62). Rather than dwell on how old that makes us feel, we're celebrating how the device has transformed the way we listen to music!

As ever, we've also got plenty of easy-to-follow tutorials (p38), expert advice (p56) and more in-depth reviews (p84). Don't forget, you can contact us at letters@macformat.com – we really do love to hear from you.

Enjoy the issue!

ROB MEAD-GREEN
EDITOR
editor@macformat.com

Meet the team

Jo Membery
Operations Editor
› What do you call a group of musical peas? An iPod! Jo thinks she's funny, but when she's singing along with her headphones in, nobody's laughing...

Paul Blachford
Art Editor
› Paul really can't wait for macOS Monterey – SharePlay could be the only way he gets to 'connect' with his teenage kids!

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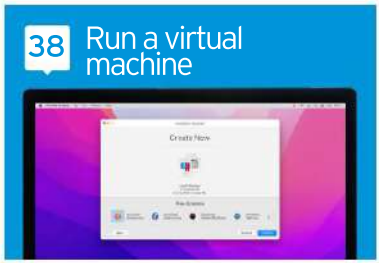

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The original online Apple Store from 1997

APPLE CORE

EDITED BY **ROB MEAD-GREEN**

Apple's September event was packed with announcements.

HOT TOPIC!

New products galore

Apple mixes huge updates with understated refreshes

Apple launched its next-gen iPhone, iPad and Apple Watch models at its 'California Streaming' event on 14 September, with Tim Cook and other Apple execs unveiling its wares to the world.

Making their debut this time around were the new iPhone 13, iPhone 13 mini, iPhone 13 Pro (see our review on p78) and iPhone 13 Pro Max, plus an upgraded 10.2-inch iPad (p81), iPad mini (p82) and Apple Watch Series 7.

In the past, Apple has adopted an 'off-on' schedule for the iPhone, where every other year brought the biggest updates. While the company seems to be moving away from that – this year's iPhone is the iPhone 13 instead of the iPhone 12S – there were few earth-shattering revelations. That said, there was still much to be excited about...

The highlight of the show was probably the iPad mini – not something you usually hear. But make no mistake, Apple pulled out all the stops for its tiny tablet, bringing its design right up to date with a full-width screen and outfitting it with a significant chip upgrade and camera improvement.

The iPad 10.2-inch changes were more incremental but worthy improvements considering its low price tag.

Meanwhile, the Apple Watch got a design that few people expected. Before the show, rumours were rife that the smartwatch was getting a flat-edged look to match the iPhone. Indeed, many reliable reporters and analysts appeared to be singing from the same hymn sheet on this one, yet the device Apple unveiled bore no resemblance to the predictions. Perhaps Apple was forced into a last-minute switch, or perhaps the reports were wrong. Either way, the new design comes with a larger display that should make interacting with it even more comfortable and streamlined.

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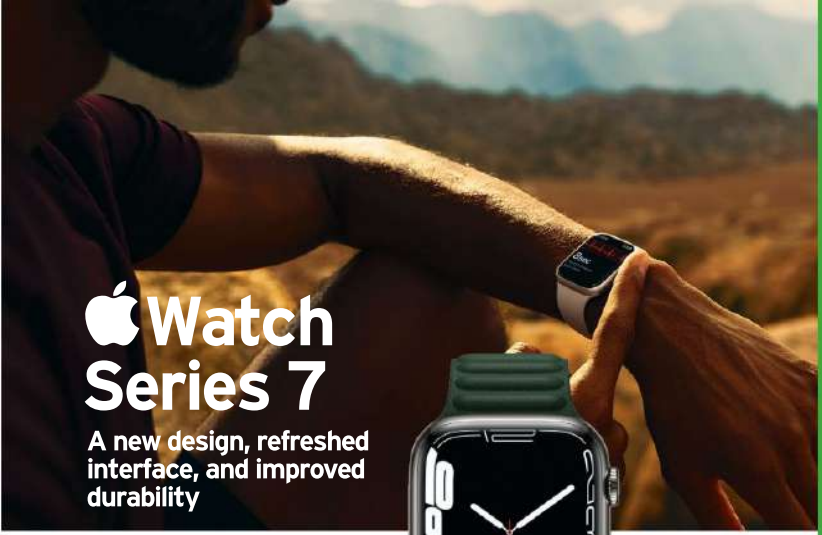


Watch Series 7

A new design, refreshed interface, and improved durability

While many of us expected a flat-edged Apple Watch to take to the stage at Apple's September event, the company surprised everyone with a totally different design. Instead of an iPhone-like right-angled chassis with flat sides, the Apple Watch Series 7 actually has a more rounded shape than the Series 6.

That softer design is paired with a screen that is 70% brighter with your wrist down, so surreptitiously checking the time should be less of a strain on your eyes. It also offers 20% more screen space than last year's model thanks to borders that are 40% thinner, with the larger display meaning the Watch now comes in 41mm and 45mm sizes. And don't worry, the new dimensions are compatible with existing bands.

Rumours abounded that the Series 7 would have flat edges, but instead it got rounder.

Bigger and better

With a larger screen, Apple has reworked the watchOS interface, with more rounded buttons matching the external enclosure. The company says you can now fit up to 50% more text on the screen, complemented by a full keyboard that you can tap or swipe. That should make tapping and texting on the go a lot faster and easier.

Apple says the Series 7 is the most durable Watch ever, with a new IP6X dust-resistance rating and a more crack-resistant frame to help protect against dents and dings.

Its 18-hour battery is improved too, charging 33% faster than the Series 6 thanks to a new USB-C charging cable. It can go from 0% to 80% in 45 minutes, and just eight minutes of charging is enough for eight hours of sleep tracking.

There are new colours for the stainless steel, Nike, and Hermès Watches, while popular bands get new colours too. Prices for the Apple Watch Series 7 start at £369, that's £10 less than the Series 6 was when it launched last year. We hope to bring you our in-depth review next issue!

Watch this space

The Apple Watch Series 7 offers 20% more screen space than the Series 6 and 50% more than the Series 3.

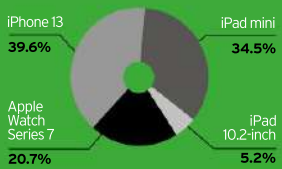
The Hermès and Nike editions of the Apple Watch now come with new bands and watch faces.

Mac FORMAT

THE POLL

WE ASKED...

Which new Apple product are you most excited about?



› Log on and see next issue's big question!
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Apple Fitness+ new workouts

› **Apple Fitness+ is Apple's fitness subscription service.** For £9.99 a month you get video workout training sessions covering a large number of exercises. It syncs with your Apple Watch and shows your goal progress on-screen. Now, Apple has added two new workout types to Fitness+ called Meditation and Pilates. As well as that, there is a new program dubbed Get Ready for Snow Season, with workouts tailored for snow sports enthusiasts and led by Olympic gold medallist Ted Ligety.

Apple Fitness+ will tie in with SharePlay in iOS 15 and macOS Monterey later in the year, which will allow up to 32 people to take part in a joint workout session. Fitness+ is also coming to 15 new countries, including Brazil, France, Italy, and Spain. As well as that, new episodes of Artist Spotlight and Time to Walk are being added to the app.

New snow sports workouts have been added with five-time world champion skier Ted Ligety.

APPLE NEWS ROUNDUP

FORTNITE OFF APP STORE INDEFINITELY

BANNED UNTIL APPEALS OVER

› Apple has indefinitely banned Fortnite from the App Store, according to Epic Games' CEO Tim Sweeney. He said Apple has informed him that his firm's game cannot return until all appeals in the' legal battle have been exhausted. Given how long the appeals process can last, that could mean years. The dispute between the two companies is far from over (turn to p16 for more).

IS YOUR MAC PROPERLY RECYCLED?

MAC USERS IN THE DARK, SAYS STUDY

› Up to 70% of Mac users wrongly believe their devices are recycled, reused, or returned to Apple after they're disposed of, according to a study by Arlington Research and app developer MacPaw. The authors say that only 40% of e-waste is recycled, negatively impacting the environment as much waste is simply disposed of without ecological considerations. Want to recycle your Mac? Check before you chuck!

Like the latest iMac, when the next MacBook Air update comes out we should see a rainbow of colour options.

MacBook Air 2022 redesign delay

A bit longer yet to wait for revamped laptop

If you've been holding out for a new MacBook Air, you might have to wait a little longer. Apple analyst Ming-Chi Kuo, who has a good track record when it comes to Apple's future plans, has claimed the company will release a freshly redesigned MacBook Air in the third quarter of 2022, from early July to late September.

That's a new estimate on the shipping date, and later than was initially predicted. Kuo had previously asserted that the new MacBook Air would splash down around the middle of 2022. So instead of a possible late spring or early summer timeframe, we might have to wait until almost October.

Still, if the rumours are correct, there's a lot to look forward to. Alongside a new Apple silicon chip and a high-quality miniLED display, the updated MacBook Air is expected to come in a range of bright, fun colours much like the 24-inch iMac. That could help it project a more light-hearted tone compared to the more serious MacBook Pro, while simultaneously evoking the classic iBook G3.

Alongside Kuo, reporter Mark Gurman has also shed light on the upcoming Air, saying it will come with two USB4 ports, a thinner design, and a MagSafe connector. With all these new features in the works, the wait should be worth it.

No more Lightning connector?

EC resurrects plans for universal smartphone charger

The European Commission (EC) has revealed a rule proposal that would force all smartphones sold in the EU to use USB-C chargers. The EC's proposal states this would cut down on waste by enabling customers to reuse old chargers when they buy a new device.

However, Apple has struck back, saying it would harm innovation by forcing manufacturers into a single standard and prevent higher-quality alternatives from being developed.

Apple is not the only company that would be affected. According to an EC study from 2019, around half of all mobile phone chargers sold in the EU in 2018 used USB Micro-B connectors, 29% had USB-C connectors, while 21% were Lightning-equipped iPhones. Judging by that, many Android models will be affected going forward.

The EC's rule proposal could mean that all smartphones have to use USB-C chargers.

Similar attempts were made by the EC in 2014 and 2018, but fell flat due in part to problems with universal charger longevity. Now, the popular USB-C is thought to solve many of these issues. According to Digital Europe and the Mobile & Wireless Forum, 68% of new phones from Huawei, LG, Samsung, and Xiaomi released in 2019 used USB-C. Could the iPhone be next?

APP OF THE MONTH

[MAC APP]

Ulysses £48.99/year (free trial)

The writer's best friend makes publishing even easier

If you spend a lot of time writing on your Mac, Ulysses is a great weapon to have in your arsenal. The word processor combines an elegant interface with top-notch features that are tailor-made for all wordsmiths.

Version 23 brings a number of new updates designed to improve publishing tools, as well as tweaks to article management and a raft of bug fixes. It's a promising update if you enjoy blogging. Among the changes is a paper plane icon that indicates when a post is published to a location of your choice, such as WordPress or Medium. There's a new dashboard widget that displays each post's status (such as draft or published), and statuses now sync between devices to keep you up to date.

If writing, blogging, or journaling are your thing, now is a great time to try Ulysses and its award-winning features.

You're Peaking
Oh là là, you seem in top shape today! To keep the momentum going tomorrow, try going for a longer workout or one that feels a bit more demanding.

[iOS APP]

Gentler: Activity Guidance

FREE (offers IAPs)

Many of us want to get fit and healthy, but getting there can feel intimidating. Instead of overwhelming you with impossible goals, Gentler learns from your level and presents achievable targets each day, helping you avoid burnout on one hand and inactivity on the other.

Why you need it: It's a fitness app for the rest of us.

[iOS GAME]

Final Fantasy IV Pixel Remaster

£15.99

The Final Fantasy series is beloved by gamers. Now, 30 years on from its original release, Final Fantasy IV has been brought it to iOS in 2D pixel-art form. The controls and interface have been revamped, and the soundtrack's been reworked, giving it a fresh feel.

Why you need it: A fun romp for Final Fantasy fans.

[MAC GAME]

The Rewinder

£11.39

Steeped in Chinese mythology, The Rewinder explores the worlds of the living and the dead. As Yun, you communicate with spirits and delve into memories, influencing their protagonists and changing history as a result. The puzzler combines enjoyable gameplay, soaring music and gorgeous graphics.

Why you need it: Storytelling meets creative puzzle play.

Image credits: Ulysses GmbH & Co. Polydor Records, Penguin/Random House, Gentler Stories LLC, Square Enix Co Ltd/Yoshitaka Amano, mistymountainstudio, Campside Media

Media Picks

What you should be playing and reading this month

[ALBUM]

Blue Banisters

Lana Del Rey

£10.99

Lana Del Rey's second album in a year focuses squarely on the singer-songwriter herself, marking an attempt to tell her life story in her own words.

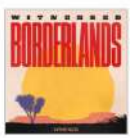
[AUDIOBOOK]

A Line to Kill

Anthony Horowitz

£7.99

When Daniel Hawthorne arrives on Alderney for a literary festival, he has no idea of the chaos that's about to unfold. A witty, funny, and thrilling listen.



[PODCAST]

Witnessed: Borderlands

A small-town sheriff and a charming outlaw find themselves snared in a headline-grabbing drug bust, where the truth is sometimes stranger than fiction.

Crave

THE GEAR WE'RE LUSTING AFTER

1

Bang & Olufsen Beosound Level

› From £1,299 › bang-olufsen.com

› **Aimed squarely at B&O's audience of tech-savvy music lovers with an eye for design, the Beosound Level is a portable smart speaker that can be positioned on a surface upright, laid flat, or wall mounted.** If you're looking for a stylishly understated speaker that isn't understated on audio quality, it's an excellent choice. It takes up only a sliver of space on a shelf, but provides a bigger, richer and more enjoyable sound than your average smart speaker.

Uniquely, this elite Wi-Fi speaker is made to be upgradeable. The wireless module, the sound processing and the battery can all be replaced with upgraded versions later – it's intentionally a modular design. The idea is to try to give the Level the same kind of longevity that people used to get from hi-fi.

2

TCL Roku TV 2021 6-Series

› From $2,199.99 (about £1,600) › tcl.com/uk

› **8K has thus far been the exclusive playground of the big players, but LG, Sony, Samsung et al will have to learn to share: TCL is making its 8K debut this year with a screen which undercuts its rivals on price, and brings super-resolution screens for the rest of us.**

Well, mostly. The 6-Series 8K is still not, at this point, particularly cheap, slashing a few hundred bucks from its rivals but still remaining at over $2,000; it is also unlikely to have the same picture processing power as TCL's more mature rivals. But it's a start, a statement, and an important marker. When TCL gets 8K, 8K ceases to be some unattainable dream reserved only for affluent buyers. It moves far closer to the norm, and we fully expect 2022 to see far more affordable 8K panels. Are you planning on getting on the 8K train yet?

Image credit: Bang & Olufsen, TCL

3

Sony ZV-E10

› **£680** (body only) › sony.co.uk

› **Here we have the follow-up to last year's ZV-1, and the big change is... unlike its fixed-lens predecessor, this mirrorless camera is compatible with the company's E-mount lenses.** It's marginally heavier, but a larger APS-C sensor from the a6100 gives the ZV-E10 far superior ISO capabilities and an expanded autofocus that covers 84% of the frame. Oddly, though, there's no significant difference in video recording capabilities. This tops out at 4K 30p, which means the ZV-1 will still have its place – if you're looking for more options in your filming, this is perfect, but there's still that point-and-shoot alternative if you prefer.

4

Gitamini

› **$1,850** (about **£1,350**) or **$64**/month (about **£50**/month) › mygita.com

› **If you like regular exercise but hate having to carry around your kit or shopping, you need a robot!** No, don't take BRIAN in *Code 404* too seriously, this robot is genuinely helpful. The 'mobile tech solution' has been developed with the aim of helping you walk more and walk further.

The robot uses cameras and radar technology to 'see' its surroundings and gauge depth and space as it follows you around. The 45.7x41.9x48.2cm Gitamini (there is a bigger version) can carry 9kg (approximately five days of groceries for a single person), and can run for seven hours/21 miles on a single charge, with a top speed of 6mph. Available in Spark Citron or Boardwalk Beige.

5

Sony LSPX-S3 Glass Sound Speaker

› **£315** › sony.co.uk

› **Atmosphere and audio combine to make the LSPX-S3 an interesting device, albeit one that makes us a little nervous.** The organic glass tube on top isn't only there to give its candle-aping LED something to reflect from, it is itself a tweeter, physically tapped by three actuators at its base (using a tech Sony calls Advanced Vertical Drive Technology) in order to resonate high frequencies. It's joined by a standard 1.8in mid-range speaker in the centre and a passive radiator for bass, giving the LSPX-S3 some serious range.

And if you're happy carrying a glass tube around with you, it packs eight hours' battery so you can give it some physical range, too.

Image credits: Sony Europe BV, Piaggio Fast Forward

iPhone IN NUMBERS

The new iPhone 13 range is beautiful. Here's the stats behind the aesthetics

15.8 trillion

› Total number of operations *per second* that can be performed by the iPhone 13 Pro's 16-core Neural Engine, part of its A15 Bionic chip. Wow.

2,000,000,000

› Total number of iPhones Apple has sold since the very first model launched in January 2007, according to Horace Dediu at Asymco.

1,000

› Peak brightness in nits (candela per square metre) of the iPhone 13 Pro's brilliant Super Retina XDR display.

2cm

› The closest you can get to a subject when taking macro images using the Ultra Wide camera on the iPhone 13 Pro.

1TB

› Maximum amount of storage available on the new iPhone 13 Pro, although it'll cost you – £1,449 to be precise, or the same as a mid-range 24-inch iMac.

5

› Number of colours available on the iPhone 13. They are: Pink, Blue, Midnight, Starlight and (Product)Red. The 13 Pro comes in four colours: Silver, Gold, Graphite and Sierra Blue.

30 minutes

› Maximum amount of time the iPhone 13 (and iPhone 12) can spend submerged at a depth of up to six metres, earning it an IP68 rating against dust and water ingress.

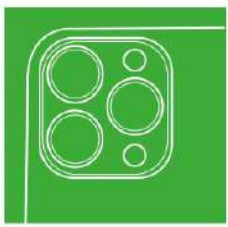
CONTACTS

Have your say on all things Apple!

Contact us

Email your queries and your questions to letters@macformat.com

LETTER OF THE MONTH!



iPHONE BLOAT?

I've read the iOS 15 article (*MF370*) twice and I'm struggling to find a single feature of this update that is remotely useful never mind interesting (forget exciting).

I've been using Apple since the Apple II. I used to find new Apple products provided novel, time-saving ways of doing genuinely useful and necessary tasks. It's been ages since I've seen anything like that: "What's new in Memories?" another sterile exercise in 'curation'.

Apple increasingly looks like every other gravy-train riding big company, providing fatuous bloatware of no real value.

BY MARK MCSHANE

ROB SAYS...

Unfortunately, not every year can be a 'tentpole' year when it comes to new products, especially after a pandemic has caused so much disruption to people's lives worldwide.

While we agree that this year's OS updates feel more iterative than innovative, consolidation can be a good thing too. iOS 13 and 14 and macOS Catalina and Big Sur all brought huge changes to the way we use our devices; sometimes shoring up those gains is the best way to go. It's why Mac OS X 10.6 Snow Leopard (2007) remains one of the most-loved OS updates Apple ever did – it built on the changes introduced in Mac OS X 10.5 and laid the groundwork for the next big update, OS X 10.7 Lion, which arrived in 2011.

SIZE IS EVERYTHING

I visited the Apple Store in Boston, USA yesterday to see the iPhone 13 in person.

I was surprised to find out that the new iPhone's screen looked much smaller than my iPhone XR's screen, despite the fact that the specifications claim that both have a 6.1-inch screen. Out of curiosity, I used the Measure tool and I indeed found out that the new iPhone 13 has a 5.5 to 5.6-inch screen and not a 6.1-inch screen. To make sure that the tool works correctly, I also measured the screen of my iPhone XR and I found that it is ~6 inches in diagonal which is consistent with the reported spec.

While it's accepted that the Measure tool is not 100% accurate, one would hope that Apple's screen sizes are...

I hope that this is an honest mistake from Apple, as this is extremely misleading for the customers, especially the loyal ones such as myself. I did not buy the new phone.

I believe that Apple customers have the right to know the truth and be presented with accurate information, each and every time.

BY CHARALAMPOS (HARRIS) LAZARIS

APP TRACKING

Thank you for Charlotte Henry's clear explanation of current privacy issues (*MF369*).

Is there a way, other than going through every app individually, to list the all apps that are allowing tracking? An app, perhaps? Or is this an opportunity for an app developer?

BY STEPHEN MANISTRE

ROB SAYS...

Thanks Stephen! You can see the tracking status of all the apps in iOS and iPadOS 15 by heading to Settings > Privacy > Tracking. To the right of each app in the list is a toggle that enables you to switch tracking on and off on an individual basis. To disable tracking for all apps, toggle the 'Allow Apps to Request to Track' button at top of the menu.

MORE POWER TO YOU

The articles in *MF369* about 'How to be an Apple Genius' and 'How to extend battery life' were so useful I am suggesting you publish them in a booklet which can be sold separately. There is too much information to keep it all in my brain.

BY DENNIS LAMB

LETTER OF THE MONTH

Win an AirFly Pro!

The author of our Letter of the Month receives a prize! Email us for your chance to win an AirFly Pro – the wireless headphone Bluetooth transmitter, perfect for use with Apple's AirPods and AirPods Pro. Find out more at twelvesouth.com.

MATT BOLTON...

WONDERS IF THE APPLE WATCH SERIES 7 COULD BE A SIGN THAT THE WEARABLE IS READY TO BE FREED FROM THE iPHONE

Previously in this column, I've mentioned that I find Apple's positioning of the Apple Watch as a potentially life-saving revolution to be a bit at odds with having premium strategies for that device, and for it to be locked to Apple's also-premium-priced phones. Shouldn't a health revolution be available to all, regardless of phone OS preference, or budget?

However, you do need to actually get the thing working somehow, and the iPhone is key to that, since the Watch doesn't have any setup system of its own.

But the Apple Watch Series 7 got me thinking that we could be coming to the end of that time. With its bigger screen, you now have a QWERTY keyboard, so entering your Apple ID and password on setup – or for logging into apps on it directly – doesn't seem such an onerous task these days. And Apple already makes cellular connectivity a standard on any steel or titanium watches, so the idea of it being able to connect to the internet out of the box wherever you are, without an iPhone to route through, isn't impossible at all.

A future Apple Watch could have enough grunt to be a standalone device

And while Apple hasn't talked much about the processor in the Apple Watch 7, the version in the 6 was reportedly based off the low-power efficiency cores in the A13 iPhone processor. These low-power cores are no slouches, despite the name – in a hypothetical future version based on, oh let's say the A15 chip, there could be enough power to give watchOS 9 or 10 enough grunt to be a standalone device, running its own updates and so on. Apple would have to add more storage, but that's not the hard part.

Potentially life-saving features such as fall detection should really be available to all, shouldn't they?

Interestingly, the Apple Watch Series 7 is also said to have an ultra-fast custom wireless data network, which can connect to a special charging disc to effectively create a way for the Watch to be attached to a computer. So hey, if Apple were to make this part of the regular charging puck, you could always connect to iTunes for a wipe and restore if anything goes wrong! If it's good enough for iPhone...

Is the Apple Watch's first true keyboard a step towards its independence from the iPhone?

All of this certainly would not make the Apple Watch any cheaper, but it would end my argument about Android compatibility. You just wouldn't need it! An Android owner can set it up and run it as an independent device. It can track health and fitness all in the device (though Apple could choose to release Activity and Health apps for Android, of course). You could browse for apps right on the device, and then sign into WhatsApp on it for calls and texts, and Spotify for your music.

But what I'd hope for here isn't that the Watch could really be totally as slick when untethered from the iPhone (because it won't be, let's face it), but as long as fall detection and irregular heart warnings and low blood oxygen warnings work, it'd be worthwhile.

ABOUT MATT BOLTON

Matt is the editor for Apple and home tech at *T3* and has been charting changes at Apple since his student days. He's sceptical of tech industry hyperbole, but still gets warm and fuzzy on hearing "one more thing".

PRIZE WORTH £549!

In association with ViewSonic

Win

Boost your Mac setup with this incredible display from ViewSonic

Every Mac user needs a great display in front of them when they do their work. If you use an iMac then you're off to a good start, but what if you're an avid Mac mini fan? Or want a second display for your MacBook or iMac?

Well, we've got the perfect solution, as this issue we're giving away the superb 27-inch ViewSonic VP2768a-4K monitor, worth £549.

The 4K Ultra HD version of the ViewSonic display we reviewed in *MF368*, the VP2768a-4K has a display resolution of 3840x2160 pixels, offers 100% sRGB and Rec.709 colour coverage, and is Pantone certified too. That makes the VP2768a-4K great for work where colour accuracy is essential, including photo and video editing. Plus, the VP2768a-4K is colour calibrated at the factory so you get perfect results right out of the gate.

The VP2768a-4K also comes with two HDMI 2.0, a v1.4 DisplayPort, two USB 3.2 Type-A, a 3.5mm audio output and an Ethernet port, plus USB-C with 90W Power Delivery so you can connect your MacBook and charge it at the same time.

The display is also highly adjustable, and can tilt, swivel, rotate, and be raised and lowered through 130mm, while its In-Plane Switching (IPS) panel ensures its performs brilliantly at wide viewing angles too.

When it comes to colour accuracy, the VP2768a-4K is the monitor to have.

THE QUESTION

To be in with a chance of winning the ViewSonic VP2768a-4K monitor, just answer this question:

What percentage of the Rec.709 colour gamut does the ViewSonic VP2768a-4K achieve?

A) 70%
B) 85%
C) 100%

› For more information about ViewSonic's monitor range and its other products for your Apple devices, head to the company's website at **viewsonic.com**.

HOW TO ENTER...

› To enter, you can visit our website at **bit.ly/MFViewSonic** (web address is case sensitive).
› For full terms and conditions, go to **bit.ly/MFViewSonic**. By sending your entry, you agree to these competition rules and confirm you're happy to receive details of future offers and promotions from Future Published Limited and carefully selected third parties, if you have given us permission to do so on the entry form.
› This competition closes on **15 November 2021**. Over 18, GB residents only.
› The winner's details will be shared with ViewSonic for the purpose of providing prizes.

For our latest subscription offer see page 34!

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Mac FORMAT

INVESTIGATES

Epic vs Apple: the verdict

The App Store is under scrutiny like never before. Charlotte Henry explores the legal challenges the company is now facing...

WRITTEN BY **CHARLOTTE HENRY**

The App Store opened on 10 July, 2008, with just 500 apps available, including The New York Times, eBay and Travelocity. It has since transformed over the years and expanded to become core to Apple's entire business.

However, as it has grown in importance, it has become a source of controversy and Apple is in the midst of legal and PR battles in a bid to defend a prized asset and the revenue it brings in. In 2020, the App Store had a gross income of around $64 billion, with most of that coming from games.

Apple 'App Tax'

Two of the highest-profile critics of the App Store are Spotify, the music streaming service, and Epic Games, the maker of the wildly popular Fortnite game. And the two companies are not shy in sharing what they think.

In May this year, Spotify's chief legal officer Horacio Gutiérrez described Apple as being "a "ruthless bully" that "uses its dominance to hobble competitors" in an article for the *Wall Street Journal*.

Epic and Spotify are among many big names who have joined the Coalition for App Fairness, which was created back in September 2020. Other members include audio streaming service Deezer, encrypted email provider ProtonMail, and Bluetooth tracker firm Tile. Together, these companies are arguing against various aspects of the Apple App Store rules, but in particular there is dissent over Apple taking a cut of up to 30% of every app-related transaction.

So, if you were to make an in-game purchase within Fortnite, Apple takes up to 30% of that fee. The same is true if you buy a subscription to a music streaming service via your iPhone, or buy an app outright. Apple justifies this by saying the App Store infrastructure allows games and services to grow, and that users are more trusting because the app has had to be approved to get into

With Apple the most profitable tech company in the world, it's hardly surprising that developers are disappointed by the cut it's taking from App Store purchases.

the App Store in the first place. However, App Store rules stipulate that developers cannot provide workarounds to this. For instance, they cannot give users a link that takes them out of the app and into a web browser to make a purchase to avoid paying the 'App tax'.

Going to court

Epic Games has been the keenest to take on Apple and has filed various complaints around the world, including in the UK and EU. However, the most high-profile case came, not surprisingly, in the United States. It involved Apple CEO Tim Cook, and the company's Senior Vice President of Software Engineering, Craig Federighi, taking the stand earlier this year. Apple and Epic actually agreed on one thing – that the trial would not be overseen by a jury. It was instead adjudicated on by Judge Yvonne Gonzalez Rogers.

Unsurprisingly, Tim Cook argued that Apple's creation and maintenance of the App Store makes it worthy of the cut that it takes... "We need a return on our IP [intellectual property]. We have 150,000 APIs [Application Programming Interface] that we create and maintain, and numerous developer tools, and the customer service piece of dealing with all these transactions."

Judge Rogers said that she understood "this notion that somehow Apple's bringing the customers to the users. But after that first time, after that first interaction, the [developers] are keeping the customer with the games. Apple's just profiting off that, it seems to me."

That trial may have ended towards the end of May, the result of which we'll discuss in a moment, but there are likely to be many rounds of appeals.

Epic Games CEO Tim Sweeney tweeted in September that Apple had banned Fortnite from the App Store until the legal dispute had

Epic Games continues to fight for direct payments, suggesting savings will passed on to the purchaser.

It looks like there are many battles ahead for Apple as some countries are seeking to impose their own legal stance on App Store payments.

been fully resolved, something that could take years. We have though had the first ruling and it was significant. The judge said that Apple cannot stop developers from adding links for alternative payment methods. Interestingly, Apple declared it a victory, with a company spokesperson saying:

"The Court has affirmed what we've known all along: the App Store is not in violation of antitrust law."

Epic Games did indeed appeal the verdict though. Not only did the judge rule in favour of Apple, Epic Games was ordered to pay Apple its 30% cut of the $12 million worth of revenue it had earned when it introduced an alternative payment system back in August 2020. This was in breach of its existing contract with Apple which is why the game was then kicked off the App Store.

Breaking new ground

In February 2021, a UK tribunal ruled that Epic Games could not pursue its case against Apple in this country, although it could do so against Google. It was deemed the dispute with Apple was better settled in the US. That didn't deter the Fortnite-maker though. The company filed a complaint with the UK's Competition and Markets Authority (CMA) against Apple a month later. Epic Games had previously filed a similar complaint with the EU and Australia.

Some countries are not waiting for the protracted American legal wrangling to end though. In August, South Korea became the first country in the world to pass a law directly trying to address payment issues. It bans Google, as well as Apple, from insisting customers use in-app purchasing systems for transactions.

Epic's Sweeney called the move a "major milestone in the 45-year history of personal computing". Meanwhile David Heinemeier Hansson, chief technology officer at Basecamp, which has also been critical, called it "the first real, big crack in the monopoly app store dam."

There have been significant developments in Japan too. In a settlement with the regulator in that country, Apple said that so-called reader apps – apps that provide previously purchased content or content subscriptions for digital magazines, newspapers, books, audio, music, and video – will be able to share a link to the provider's website so users can manage their account. Although the settlement was reached in Japan, it will be applied globally from early 2022. Phil Schiller, an Apple Fellow and a key figure in the story of the App Store, said that the change "will help developers of reader apps make it easier for users to set up and manage their apps and services, while protecting their privacy and maintaining their trust."

No doubt lawmakers around the world will continue to watch and see how this all plays out before making their own decisions.

Apple has made various moves of its own to try to reduce or remove the legal pressures it is facing. In November 2020, it announced the introduction of a 15% commission level. This is applicable to all developers who made up to $1 million in 2020 for all of their apps, as well as those who were new to the App Store. If a developer then goes over the $1 million threshold, the 30% commission rate is applied for the rest of the year. However, if a developer's business then falls below the $1 million threshold in a future calendar year, they are able requalify for the 15% commission rate the following year. A move that would certainly suggest Apple is both willing to adapt (at least a little!) and supportive of small businesses and developers.

Can Apple save the App Store as we know it? >

> **The App Store has grown far beyond its relatively humble roots.** However. upcoming decisions in the US and elsewhere may bring about fundamental changes. At the moment, Apple is allowing elements of the App Store to be chipped away at piece by piece, as is the case with the recent decisions in South Korea and Japan.

We have seen that the company can be proactive in this area when it wants to be though, such as reducing the commission paid by smaller developers. Surely it would be better for Tim Cook and the other top Apple executives to shift things a bit, while it is still in their gift to do so, rather than wait for others to make the decision? Because one thing is for certain, this issue is not going away any time soon.

Will Apple change policy willingly or risk a ruling from above?

SUPERGUIDE

macOS Monterey

Your next big free Mac upgrade has arrived – here's how to make the most of it, from AirPlay to Shortcuts

Written by Howard Oakley

The last few years of macOS upgrades brought trauma with their advances. We've lost 32-bit apps, gained a new file system ideal for SSDs and Time Machine backups but unsuited to hard disks, and previously simple startup volumes have been split to lock the System away in a snapshot.

Monterey is a welcome chance to get your breath back. On Intel Macs at least it makes no deep changes, and even Time Machine will back it up in continuity with existing Big Sur backups. Instead, Apple's attention has turned to improving its most popular apps like FaceTime and Messages, and bringing new features like Shortcuts and Quick Notes.

These improvements are each enhanced by their integration with other features. Live Text is accessible optical character recognition which isn't that novel, but when linked with Look Up it becomes a powerful tool. FaceTime's SharePlay links to media apps like Music and TV. Those are the themes for Monterey – consolidation, integration, and generally not upsetting the Apple cart.

M1 Exclusive

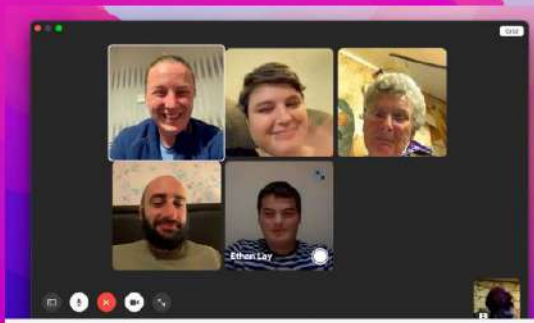
› Monterey's features weren't expected on all supported Macs. The only models to enjoy them all are M1 Macs. Live Text and AirPlay have worked well when tested on most Intel models, but Object Capture requires an M1 or ample memory and VRAM.

Which Macs work with Monterey?

- ✓ All M1 Macs (all features)
- ✓ iMac Late 2015 and later
- ✓ iMac Pro
- ✓ MacBook Early 2016 and later
- ✓ MacBook Air Early 2015 and later
- ✓ MacBook Pro Early 2015 and later
- ✓ Mac mini Late 2014 and later
- ✓ Mac Pro Late 2013 and later

FaceTime, Messages, Photos and more

Enrich your FaceTime calls and share in Messages



Bring your whole family together in group calls with Android devices and PCs.

FaceTime

FaceTime on the web lets others access individual or group calls via their Chrome or Edge web browser without needing Apple hardware to participate, and you can send anyone invitations using web links. Those links and Calendar events ensure that everyone knows when to meet next. For group calls, tile up to 18 callers into a single grid view.

Portrait mode puts the focus on the person by blurring the background behind them (M1).

Audio improvements add two modes, one to exclude background sounds in Voice Isolation, the other to do the opposite in Wide Spectrum, useful for voices with music or small groups. Spatial audio places each speaker's voice in space to help you distinguish them.

SharePlay

This integrates shared audio including music, video from movies and TV shows, the screen on your Mac or device, and text from Messages, to enrich FaceTime calls. Enjoy them with those you call in flexible ways: you might want to share your music with friends, each adding their favourite tracks for you to listen to together. Smart volume control adjusts audio levels so that when you want to talk you don't have to shout over the music.

Play controls like pause and rewind are synced so that everyone watching video remains in perfect sync. Sharing your screen lets you show others websites, and is useful for helping one another with work or solving problems together.

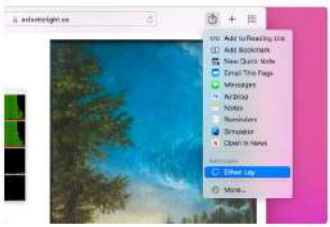
HOW TO Share your screen with FaceTime

1 Enable sharing

Open the Messages app, and in its Preferences select the 'Shared with You' tool at the right. In this window, ensure that automatic sharing is turned on, and that it's enabled for each of the apps listed below.

2 Set Safari's Start Page

Shared web links are the simplest to deal with. On Safari's Start Page, open the menu from its control at the bottom right of the page and enable 'Shared with You' to show all received links on your Start Page.



3 Share from Safari

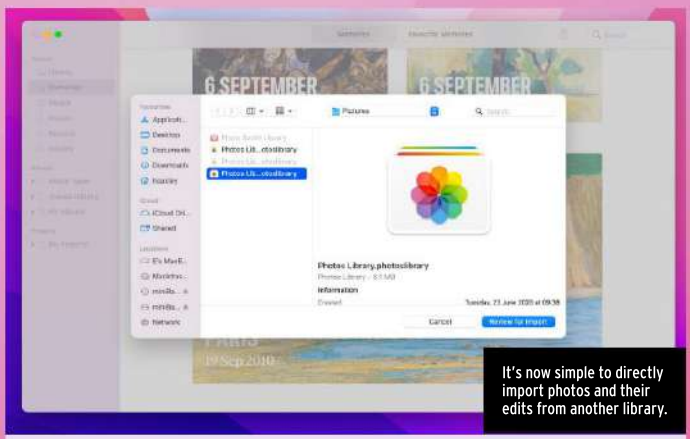
To share the current page as a web link use the Share tool at the upper right of the window. This can send that page to the open conversation in Messages ready for your friend to open that link in their web browser.

Messages

Major improvements in Messages come in its new Shared with You feature, which links photos, news, TV, podcasts and web links from a message to the corresponding app. Put a link to an article like a product review or a suggestion for a present into your message, and your friend sees that link appear automatically in Safari's Start Page and its sidebar. The same applies to links to Photos, Apple's News, Podcasts and TV apps.

To share several photos at once, put them into a collection, which tiles them together into a collage, or add more to turn it into a stack you can flip through. Photos sent in messages also get an easy Save Photos button at last.

The new Save Photos button beside a stack of images saves them straight to iCloud Photos.



It's now simple to directly import photos and their edits from another library.

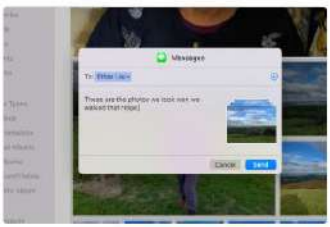
Photos

The Photos app is relatively unchanged, with most additions coming in Memories features due in a later update. The app at last gains the ability to import original photos and their edits straight from a second Photos library, which improves management of multiple libraries. Another helpful improvement is faster initial sync with iCloud Photos when you first connect a new device.

Photos is also integrated into Messages' new Shared with You feature to improve handling of received photos, and there's integration with Visual Look Up which enables you to learn about objects identified in a photo.

Coming soon in an update to Photos, the look of Memories will be much improved, with animated and titled cards and collages of multiple images. Its interactive interface will have simple controls to pause, replay and skip ahead, while timing of transitions remains synced to the music. You'll be able to change the song or look in real time too.

New memory types coming include more international holidays, child- and pet-focused themes, which will also recognise individual dogs and cats. Cinematographic looks will add mood by automatically analysing and adjusting contrast and colour of photos and video to give them a distinctive and consistent look.

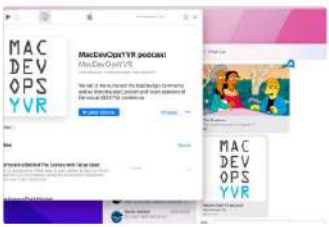


4 Share a stack of photos

To share images from Photos, select all the pics you want to send in a collection. The Share tool again offers to send these to your friend in the current conversation. They'll then receive them either tiled or stacked.

5 View a stack of photos

Click on a stack you've received to view them in a Quick Look preview, from here you can add them to Photos, or send them on to someone else. Click the Save Photos button next to the stack to add them to iCloud Photos.



6 Podcasts and more

Other shared items in Messages work the same. Click on shared TV programmes to see them in the TV app, and similarly with Podcasts. To share from any of Apple's media apps, use the same menu from the Share button.

Safari, Shortcuts, Focus and Notes

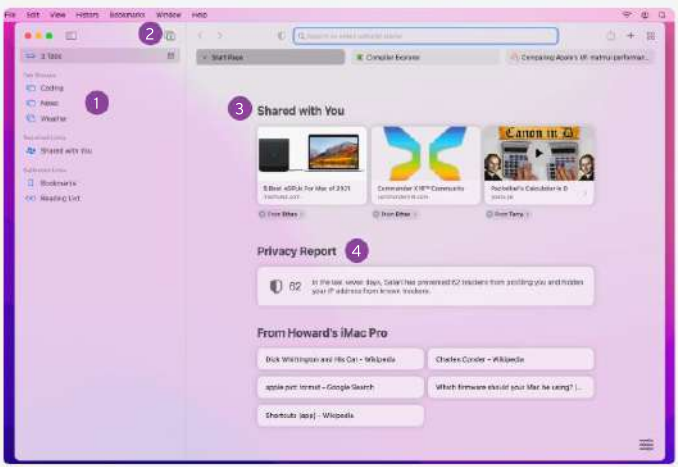
It's easier than ever to stay productive in Monterey – here's how

What's new in Safari

During testing, Apple's new streamlined tab bar proved unpopular, so windows retain a layout more similar to the one used in Big Sur.

You can now group tabs, making them easy to switch between and a boon to those prone to gathering dozens of tabs. Shared with You links are added to Safari's sidebar, with Quick Notes in its Share tool. Intelligent Tracking Prevention should now block most trackers, and HTTP sites are browsed using the more secure HTTPS where it's available.

EXPLAINED... Safari's better browser



1 Tab Groups
› Bring order at last to those dozens of tabs by sorting them into themed Tab Groups.

2 Add Tab Group
› Add more tab groups by clicking this button.

3 Shared with You
› Show links shared in your Messages on Safari's Start Page so they're easy to access.

4 Block trackers
› Safari now includes Intelligent Tracking Prevention to block any attempts to track you.

Focus

New tools based on Big Sur's Do Not Disturb feature manage all your notifications and other distractions when you want to get on with work, rest or play. Controlled in an enhanced Notifications & Focus pane, you can auto-reply to Messages while still receiving urgent messages and allowing other essential interruptions. Those whose messages are blocked are told of your setting, and best of all you can automatically apply a Focus across all your devices at once.

Notifications

As well as Focus controls, the Notifications tab of that pane gives you even finer control over settings for individual apps, including the addition of time-sensitive alerts which will always be delivered immediately. Banners and alerts now include contact photos and larger app icons to make them instantly identifiable. You can also temporarily mute threads in Messages and individual apps so they won't interrupt you without having to change your current Focus.

Notes and Quick Notes

Hashtags have come to Notes at last: tag any note with # followed by a keyword, and use the Tag Browser to find all notes with that tag, which you can use for custom Smart Folders. Shared notes gain an Activity view to summarise updates, and you can link collaborators using @. Quick Notes are accessible anywhere through a hot corner or keyboard shortcut, and you can add text or images to them from Safari, and give them context from an app to remind you later.

Shortcuts

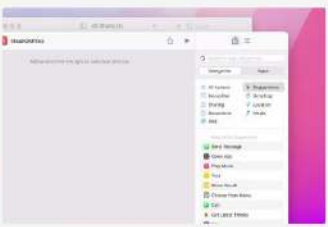
If you've been longing to automate repeated tasks on your Mac the same way that you've been able to in recent versions of iOS and iPadOS, Shortcuts will be one of your favourite new additions to Monterey.

Apple says it's the way ahead for automation, and will eventually replace Automator but probably not AppleScript. It's visual programming similar to that in Automator, where you assemble Action building blocks into your Shortcut, which you can then run from the Dock, menu bar, the Finder, Spotlight, Siri and elsewhere too.

Dozens of actions are supplied to get you started, and there's a Shortcuts Gallery with useful and instructive examples. Some third-party apps already support them, but plenty of popular Mac apps don't. They're easy to share without having to negotiate baffling security settings, and M1 Macs can also run many shortcuts from iOS and iPadOS.

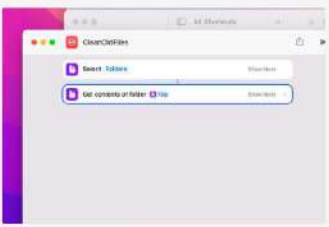
If you're already used to Automator, Shortcuts brings an excellent future. Whether it will ever make automation more accessible to those that see it as a technically-savvy domain remains in doubt, but when you get a chance, make sure you at least look through its gallery of examples to see what it has to offer.

HOW TO Clear out old files with Shortcuts ›



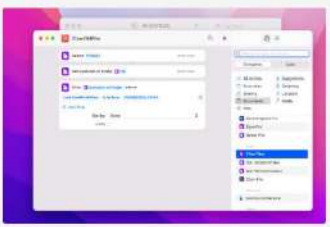
1 Create a new shortcut

This sorts Preference or other files which haven't changed for a while into a new folder in your Documents named SavedFiles. In Shortcuts, select All Shortcuts and click '+' to create a new shortcut. Give it a name.



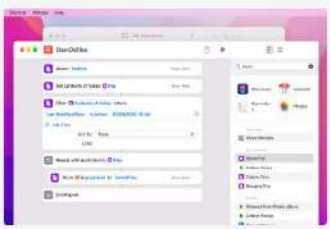
2 Add first actions

Select the Documents category at the right and locate the Select File action. Drag it into the shortcut main window and set it to Select Folders in its pop-up menu. Repeat with a second action to 'Get contents of folder'.



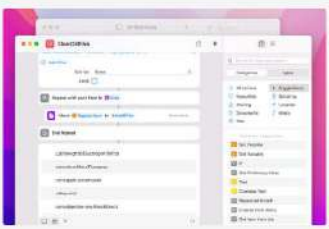
3 Set file filter

Add the Filter Files action, in which you can add a filter to select only those files whose Last Modified Date is before a date that was at least a year ago. The output of this action will be the list of all those old files.



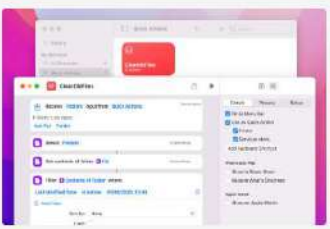
4 Set the move action

Find the 'Repeat with Each' control by selecting All Actions and searching for Repeat. Then find Move File the same way, and drop that before the End Repeat action. Set the destination to your new folder SavedFiles.



5 Test your shortcut

Copy a range of files, some of them with old Last Modified dates, into a folder in Documents to use for testing your shortcut. Then click the Run Control option at the top, select the source file and check it works.



6 Make it accessible

Once you're happy, add your shortcut to the Menu Bar folder in My Shortcuts, making it easy to access from Shortcuts' own menu. You could also add it to the Finder's Quick Actions, but need to change its input.

Live Text and Maps

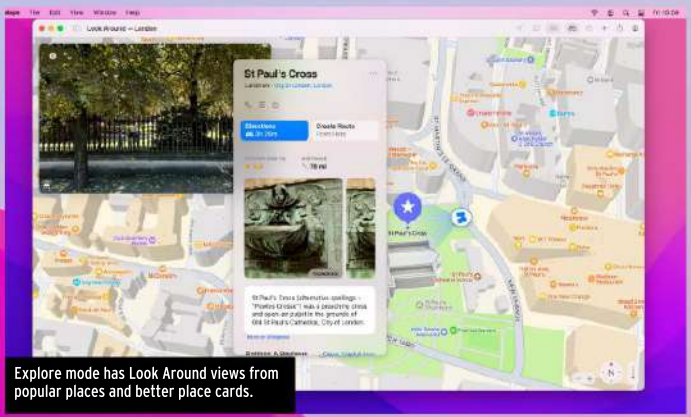
Explore better with two new modes in Maps, and look up text in images

Apple's Maps has had a bumpy ride, and faces tough competition. It has languished far too long, demonstrating how important presentation and reliability are. Monterey doesn't bring any radical change, but it has received more thorough attention to detail which could now make it your first choice for planning journeys and tours, and more fun for the armchair traveller too.

In addition to existing Public Transport and Satellite map modes, Maps now has dedicated Explore and Driving modes which are far better than Big Sur's default. Explore mode shows where to go, while Driving shows how, or sometimes whether, you can get there by car, including traffic delays and details of roadworks. All four modes have been redesigned to improve labelling of streets in urban areas, and points of interest and facilities are more clearly visible. Cyclists are still relatively neglected, as designated bike routes and lanes aren't displayed, neither are footpaths except when zoomed close in, where a lack of topographic information makes them nearly useless.

Personal planning

Each Maps user has their own account, with personal preferences for their type of public transport, their favourites and guides. Mail and Reminders have wisely been added to the Share menu, and



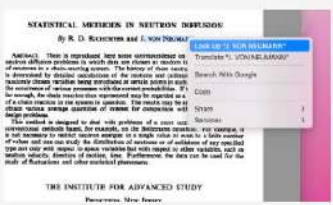
Explore mode has Look Around views from popular places and better place cards.

Driving mode provides an overview and details of roadworks and traffic delays.

zooming right out now displays an interesting interactive globe.

Guides, Flyovers and Look Arounds provide a rich experience when planning a visit, and in some parts of the world are good enough to take you on long exploratory adventures. Place cards have been improved, so that the information they provide about businesses and points of interest is better arranged.

But once you get out of your car and outside the centres of major cities, Maps still tends to abandon you in the wilderness, with the only clear direction coming from specialist third-party mapping apps. Even choosing Fatmap's guide to Ben Nevis links you to its site selling products, and finds a mountain near Queenstown in New Zealand rather than the peak in Scotland. Oh, Apple Maps, please find us the right Ben.



Rough old scans, clear handwriting, and most other text are game for recognition.

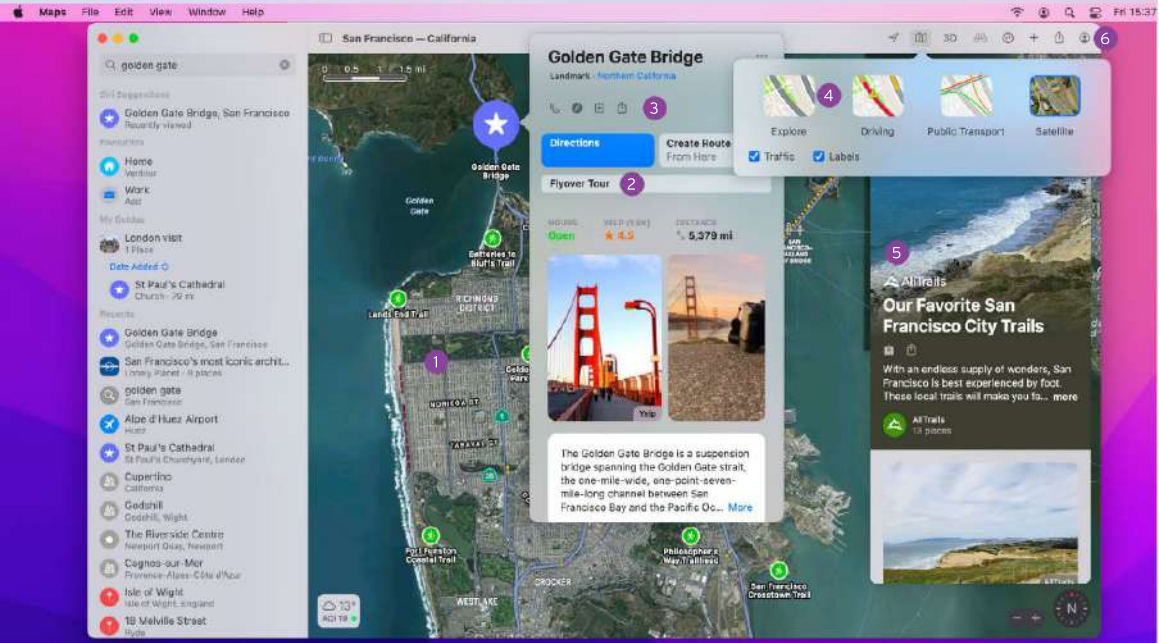
Live Text

Optical character recognition (OCR) isn't new technology, although Live Text is impressively good at it even when working from cursive, handwritten or distorted text.

What's new with Monterey is that Live Text will perform its OCR trick on any text displayed in images; it's so quick that it's interactive on M1 Macs; and it links through Look Up, thanks to Siri's search.

It currently works with standard image formats like JPEG, PNG and HEIF in Preview, Photos, Screenshot and Safari, and when the image is

EXPLAINED... What's where in Maps >



1 Enhanced detail in cities

City centres like London feature even finer details in satellite and Flyover views.

2 More and better Flyovers

Flyover tours of popular landmarks are easier to access and come in superfine detail.

3 Improved place cards

These have been redesigned to put key information and tools at the top for easy access.

4 Two new map modes

Explore for browsing or walking round a locale, and Driving when you need to get there.

5 More and better guides

Curated guides for a wide range of trails drawn up by those with good local knowledge.

6 Individual accounts

Each Maps user has individual settings for preferred public transport, guides and more.

Look Up goes wider than Wikipedia, offering a movie of the same name from a TV source.

previewed using Quick Look. It's language sensitive, so don't expect it to work with Chinese or Japanese when your Mac is running in English.

Simply place your pointer on text it has recognised and it'll change into an I-beam to select the text. Double-click to select a word and ctrl-click to select Look Up from the menu for a regular web search or Siri's more extensive information. Selected text can also be copied and pasted contextually into other apps, such as web links in Safari, perhaps.

Click the information button on an image with recognised objects or scenes and non-textual Visual Look Up provides further information about what's in your photo, such as the breed of dog or a well-known landmark.

Universal Control and AirPlay to Mac

Integrate your Mac and devices productively, and for playback

One of the most practical of all Monterey's new features, Universal Control may not make it for the first release. It's the logical extension of Sidecar in integrating your Mac and iPad. Unlike Sidecar, there's no wobbly setup: just bring your Mac and iPad close together, push your pointer from one towards the other, and they automagically link up to form one continuous workspace. The pointer then switches from being the usual arrow on your Mac to a round dot when it's on the iPad's display.

If you've got more devices, it should be good for up to three of them, sharing a single keyboard and mouse/trackpad across a common virtual display. You can drag and drop content including text and graphics between linked devices, making it the fastest and most convenient way to pass what you've sketched on your iPad with an Apple Pencil from there to a larger composition on your Mac.

AirPlay to Mac

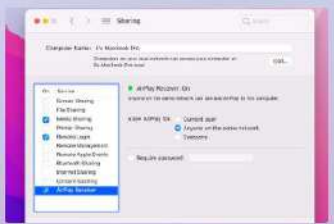
AirPlay now lets you send rich media including audio, video, photos and even played-back Keynote presentations from your iPhone, iPad or another Mac to your Mac to be played there. If the receiving Mac has a large display or feeds your audio system, this is a simple way for smaller mobile devices to make the most of going big. It's been a strange omission from macOS which Monterey finally puts right.

Connecting your device the more convenient way using Wi-Fi does add a slight time lag to playback due to the network, which should be fine if you're using your Mac primarily as an audio player. If you need perfect sync between them for a presentation, connect them directly using a USB cable. AirPlay is simplest if both systems are using the same Apple ID, but can also be set up in the Sharing pane for anyone on the same network, or everyone if you want.

When playing content from apps such as Keynote or Photos on Mac, you can choose whether to mirror the display on your device, or extend it by using the Mac as a secondary display.

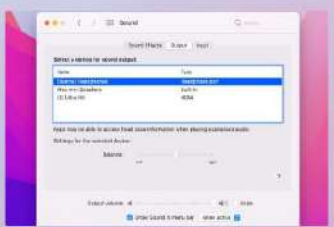
Once enabled on your Mac, connect as you would to any other AirPlay device.

HOW TO Use your Mac as an AirPlay 2 speaker



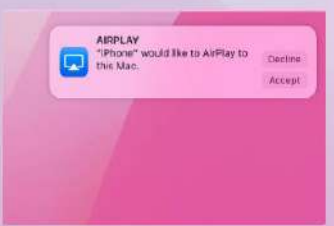
1 Set AirPlay Receiver

In the Sharing pane, enable AirPlay Receiver. Decide whether to limit who can use your Mac for AirPlay, whether just the current user connected to the same Apple ID, anyone on your local network, or everyone.



2 Set Sound output

Switch to the Sound pane and ensure that its Output section is set correctly to get the best out of the AirPlay output. Here you'll probably want to push Output volume to maximum to give full control on your device.



3 Switch play to Mac

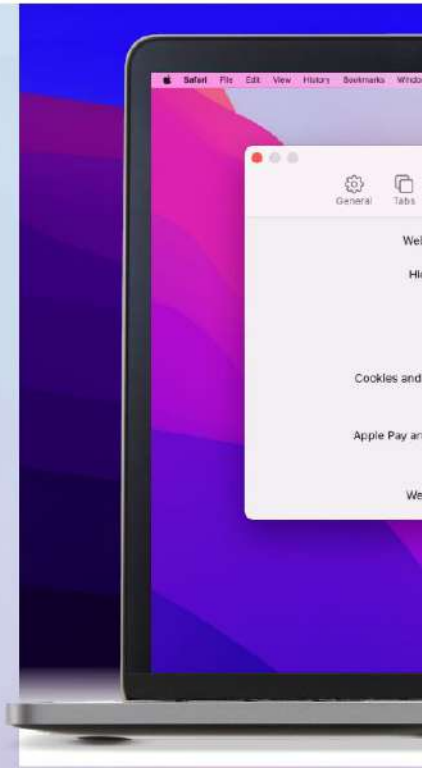
Start playing the track on your device. Tap the AirPlay icon at the foot, and select your Mac as the destination. Agree to this in the notification shown on your Mac, and the audio should switch over immediately.

The source for tech buying advice

techradar.com

Mail, Privacy and iCloud+

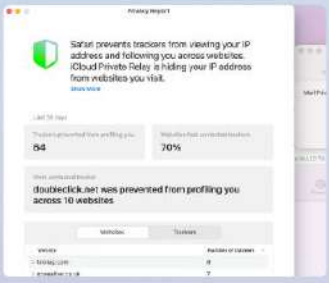
Enhance your privacy and security



Mail's new Privacy Protection is designed to make it harder for those sending mail to you to follow your activity when you receive their incoming message in the Mail app, but doesn't apply to third-party mail clients. It does this by hiding the IP address normally seen from the Internet for your Mac, and loads any remote content in the message privately in the background. That prevents the sender from matching your email address, IP address, and information they can gather from your connection to that remote content.

Mail does this even when you don't open the message in your Inbox. If you use email much to exchange messages with companies or organisations which might send links to sites designed to extract personal information, this is a valuable addition. If almost all your messages are with friends or other individuals, then it's probably not going to be worth enabling.

When you first open Mail in Monterey, a splash window asks you to choose whether you want Privacy Protection enabled; you can change that later using the Privacy tool in Mail's preferences. The app is largely unchanged, but hopefully being steadily stripped of multitude of bugs lingering from Big Sur.


Safari prevents trackers from viewing your IP address and following you across websites. iCloud Private Relay is hiding your IP address from websites you visit.
84
70%
doubleclick.net was prevented from profiling you across 10 websites

New privacy features come with Apple's Mail and Safari, when used with iCloud+.

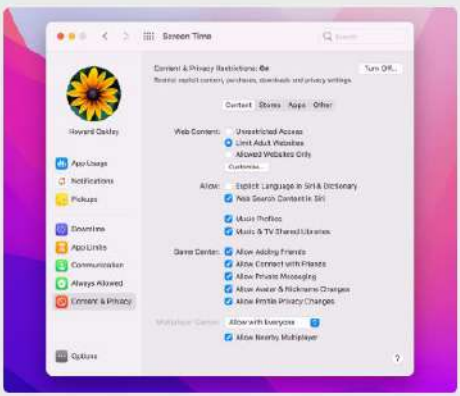
Keep unique

Apple's forthcoming iCloud+ service adds two further features to your mail. Hide My Email is an addition to Mail Privacy Protection which lets you send and receive email without using your real email address. You do this using unique, random addresses created as part of the new iCloud+ service, which forward all incoming messages to the Inbox of your real address. The other feature does almost the exact opposite: you can obtain your own personal domain name, which can be shared between invited family members.

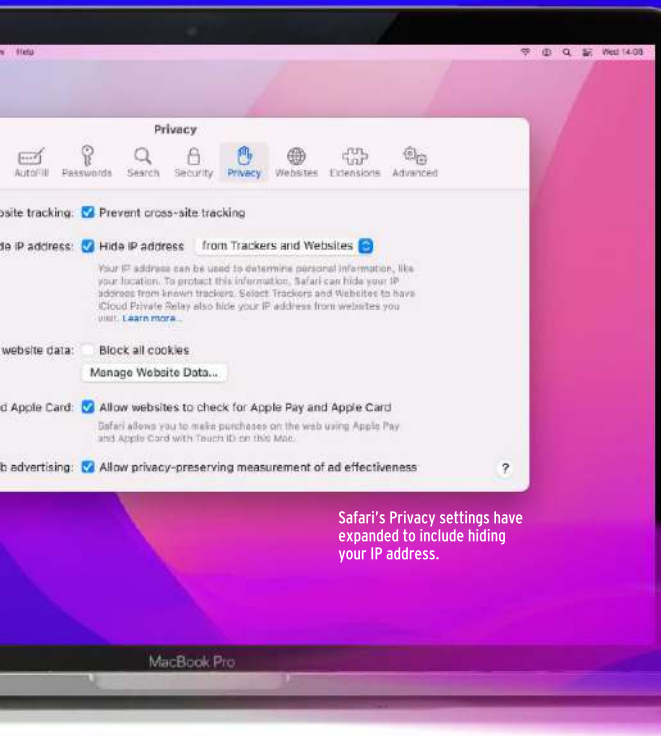
The other major innovation in iCloud+ is Private Relay, which protects your privacy when browsing with Safari. When this is active, Monterey ensures that all your outgoing requests and

Child safety protection

Apple has postponed introducing three intended changes to detect child sexual abuse material (CSAM). Aimed to enhance parental protection to warn parents of sensitive content in a child's Messages, and to intervene when Siri and Search are used for CSAM, the company has decided to improve these and reach better consensus before adding them in "months". Even then, they'll only apply in the USA. Of these changes, the most likely to benefit users in other countries, should Apple extend its coverage, are those intended to protect children from sending or receiving sexual explicit images using Messages, and from searches for CSAM content online. There should be plenty of advance notice should Apple want to extend these to other countries, and many local legal issues to deal with too.



For the time being, parental controls in the Screen Time pane haven't changed.



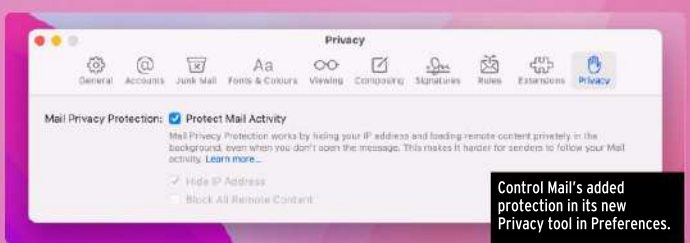
Safari's Privacy settings have expanded to include hiding your IP address.

traffic are encrypted and pass into the Private Relay service in iCloud. Your traffic is then sent through two separate relays, the first of which anonymises the IP address, and the second decrypts the destination address and forwards the message. Together these ensure that your IP address, location and details of browsing activity are inaccessible to the site or service Safari connects to. Apple claims that it too has no access to the info, but this has yet to be fully evaluated by external security researchers.

iCloud Private Relay isn't the same as Virtual Private Networking (VPN), and won't be available in some countries like China, Belarus or Saudi Arabia, but should prove an effective way to prevent sites and servers from gaining the information they can obtain at present.

How useful it is depends on the sites you visit, and how much you value your privacy. If you already use a good VPN service, then it won't be a full substitute.

The final new component in the iCloud+ service supports HomeKit Secure Video. This connects your security cameras through your Home app to store their recordings in iCloud. They're automatically kept there fully encrypted end-to-end, so that even Apple doesn't have access to their content, only you and those you authorise to view them. In case you're wondering how much all this encrypted video is going to cost in iCloud storage, Apple says that none of your HomeKit Secure Video will count against your storage allowance, as it's all part of the iCloud+ subscription.



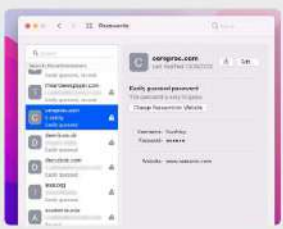
Control Mail's added protection in its new Privacy tool in Preferences.

Privacy and passwords

Macs with built-in cameras have long shown an indicator light when the camera is active. Monterey adds a software indicator to the Control Centre for a similar warning when the built-in microphone is in use.

There's one completely new pane, for Passwords. This centralises saved passwords for apps and websites, and can import and export passwords from other password managers such as 1Password. It's also supported on Windows by an extension for Edge and a new iCloud passwords app for Windows. Although not a full password manager, you can set up verification codes which autofill to complete two-factor authentication (2FA). If you don't already use a password manager, these should bring real benefits, particularly with 2FA.

Once authenticated to the Password pane, passwords are shown under the pointer.



This new pane consolidates checks for compromised or vulnerable passwords.

Everything else

Accessibility, Finder, Game Center, Books, and more

Starting up from external disks with M1

M1 Exclusive

Monterey changes the way to set Secure Boot policy for bootable external disks on M1 Macs. To drop from Full Security, you have to start up from the external disk, shut down, then start up in Recovery mode by holding the Power button. That takes you into the Recovery system on that external disk, where you can change its policy using Startup Security Utility. When started up from the Recovery system on the internal SSD, you can only set policy for that disk, not external disks.

From cradle to grave

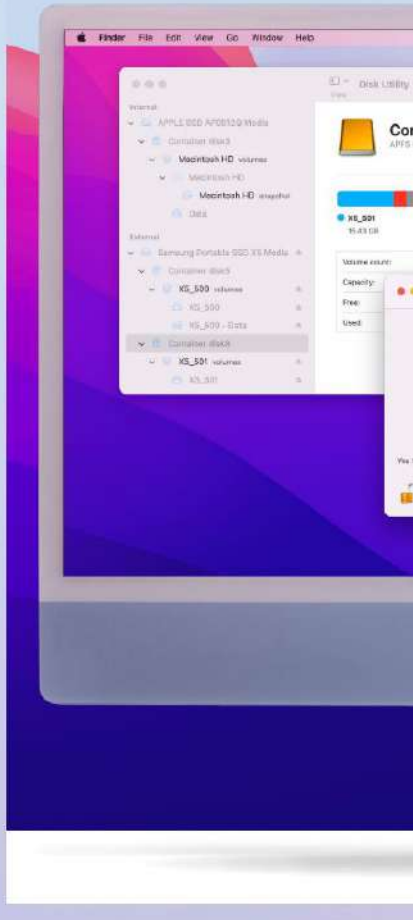
The terrible toll of Covid has brought problems with unexpected deaths. To help simplify tasks for next of kin, Monterey introduces Digital Legacy, where a person generates an access key for their devices before they die and shares it with executors or family members. When they die, the executor sends the key to Apple and activation lock is removed from their devices. Accompanying this are Account Recovery Contacts to recover the deceased's iCloud account.

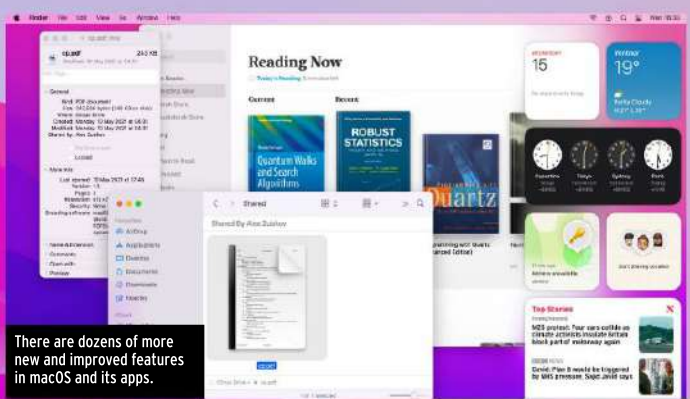
Most laptop models gain an optional new Low Power Mode, to reduce display brightness and slow hardware clock speed when needed to prolong battery endurance. Should you want to remove all personal data and apps, for example when selling or passing your Mac on, there's a new option to Erase all contents and settings, while keeping the current installed System volume. On M1 and Intel Macs with T2 chips this doesn't need to erase anything, but destroys the encryption keys for the current Data volume instead, which is even better.

There are several Accessibility improvements. Markup is a way to add persistent image descriptions which are read by VoiceOver; these persist when that image is shared with other devices including Macs. VoiceOver can also read custom descriptions added to signatures so you can choose the right one for a PDF document. Voice Control gains support for several new languages, including French, German and Chinese, as does Siri. An addition to contextual menus offers instant translation of selected text.

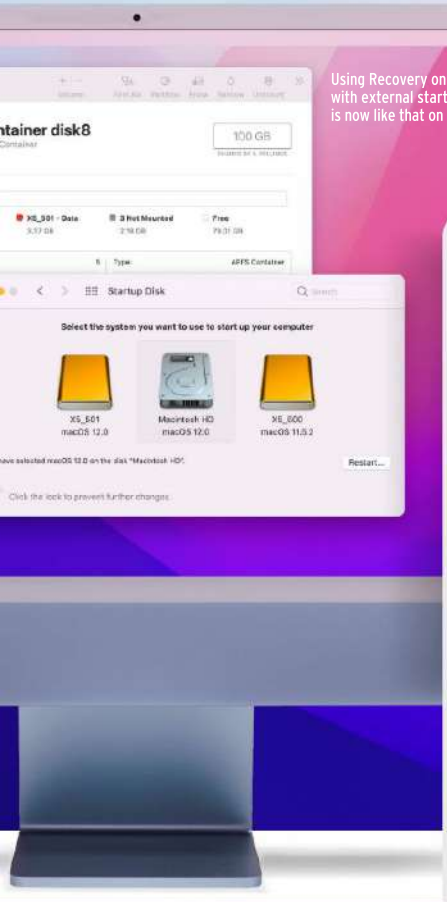
Keyboard shortcuts are expanded so you can control everything from your keyboard, and don't need to use a mouse or trackpad. You can also customise the appearance of the pointer to make it easier to spot when it moves or changes type to an insertion point, crosshair and other forms. Memoji have been extended with additional customisations including a helmet for headgear.

The Finder gains all the benefits of running suitable shortcuts, which can be launched from the Touch Bar, the main menu bar, and in Quick Actions. This makes it simple to apply batch actions to convert or rename hundreds of files such as images without having to open them in an app. There's a new folder in the





There are dozens of more new and improved features in macOS and its apps.



Using Recovery on M1 Macs with external startup disks is now like that on Intel.

Recovery mode on M1 Macs

M1 Exclusive

Recovery mode on M1 Macs has changed, although most won't notice too much. Press and hold the Power button and Big Sur starts your M1 Mac up from the dedicated Recovery container on its internal SSD, regardless of whether it has just been running from an external disk. That remains true when it has been running Big Sur, but if it has just been using Monterey, the Recovery system will be that in a Recovery volume on the last boot disk, not the internal SSD.

Say your Mac has macOS 12.2 installed on an external disk, and 12.1 on its internal SSD. When it was last started up from that external disk, shut down, then started up into Recovery, it will load the Recovery system for 12.2, the last system it booted from. When it had last been started up from its internal SSD, it will load the Recovery system for 12.1 from the internal SSD instead, essentially the same behaviour as an Intel Mac.

sidebar of Finder windows containing docs shared in iCloud which shows info about their status such as the identity of the last person to change a file.

To work better with secondary displays including iPads, the Finder now resizes windows which are moved between multiple displays, and Split View management is improved. The standard file copy progress indicator changes from a bar to a pie chart, and gains pause and resume controls.

And the extras

Game Center makes it easier to play with friends, with a new friend request inbox, and integration with Messages in a multiplayer friend selector. You can save a clip of the last 15 seconds of gameplay using the Share button on some controllers, and new games are automatically added to a folder in Launchpad, making them accessible with a controller.

Object Capture is an innovative new technology which will soon be supported by apps which use it to construct realistic 3D objects from series of photos. Although Monterey doesn't ship with an app to use this, several are expected in the coming months.

Books has been redesigned and its search improved. Find My has a widget, can now get an approximate location for AirPods Pro or Mac so you can get within Bluetooth range, and has streaming updates to the locations of family and friends to give better sense of their movement. Reminders gains the tag features introduced in Notes, and more.

An A to Z of new features in Monterey

› AirPlay to Mac
Play audio, video, photos and more from a connected iPhone/iPad/Mac (various)

› Digital Legacy
Method to remove activation lock from someone's devices after their death (general)

› Focus
Managed notifications and distractions (Notifications & Focus)

› HomeKit Secure Video
Encrypted storage in iCloud for security camera recordings (iCloud)

› iCloud+
Forthcoming enhanced iCloud service (general)

› Intelligent Tracking Prevention
Technology to prevent trackers (Safari)

› Live Text
Real-time optical character recognition of text in images (various)

› Look Up
Live Text linked to additional info from Siri and Apple apps (various)

› Low Power Mode
Reduced display brightness and CPU clock speed to prolong battery endurance (laptops)

› Mail Privacy Protection
Technology to prevent sender from gaining info about you via email (Mail)

› Memories
Played albums of themed images (Photos)

› Object Capture
For building 3D models of objects from multiple images (apps to be released)

› Portrait mode
Focus on person, blur background (FaceTime)

› Private Relay
iCloud service to protect privacy when browsing (Safari)

› Quick Notes
Notes accessed from within other apps (various)

› Shared with You
Links integrated in Messages (Messages)

› SharePlay
Integrate audio, video, display, Messages in FaceTime calls (FaceTime)

› Shortcuts
Automation script built from individual Actions to perform repeated tasks (Shortcuts)

› Universal Control
Share keyboard and mouse/trackpad across joined displays of a Mac and connected iPad (general)

› Visual Look Up
Object recognition in images linking to info about objects (various)

› Voice Isolation
Exclude background sounds and noise (FaceTime)

› Wide Spectrum
Inclusive mic input with music, group and background sounds (FaceTime)

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Master Apple shortcuts

macOS

- ⌘ is the Command key, which is also labelled *cmd*.
- ⌥ means the Option key, labelled *alt* or *opt*.
- ctrl means the Control key, labelled *ctrl*, and shown as ^ in shortcuts in the menu bar.
- ⇧ is the Shift key.
- ← is the Delete key, which deletes to the left. fn+← deletes to the right.
- ⇥ is the Tab key, which shifts the focus between *some* controls.

iOS

- A *tap* is a brief contact of (usually) one finger on your device's screen.
- To *drag* is to move a finger across the screen to scroll or pan around content.
- *Swipe* means move one or more fingers across an item or the screen, then let go.
- A *flick* is like swiping, but it's quicker, and is often used to scroll content more quickly.
- *Pinch* means move two fingers together or apart, usually to zoom in or out.
- *Touch and hold* means lightly rest your finger on an item and wait for a reaction.

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WHAT'S INSIDE

38 RUN A VIRTUAL MACHINE
Use Linux or Windows on an M1 Mac

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Learn tracks by isolating their sounds

42 PRODUCE COMPOSITE IMAGES
Select, transform and combine multiple layers

44 STREAM MOVIES
Watch and manage local movie and TV files

46 HIDE YOUR EMAIL ADDRESS
Get easy privacy protection for free

48 MASTER NEW AUDIO OPTIONS
Set up Dolby Atmos and Spatial Audio

50 JOIN CLUBHOUSE CHAT
Find fascinating audio conversations

52 WATCH COMPLICATIONS
Create your own with Watchsmith

54 HOW IT WORKS
Reverse wireless charging explained

Run a virtual machine

The best way to run Linux or Windows on an M1 Mac for the present

IT WILL TAKE
› 20 minutes, plus download time

YOU WILL LEARN
› How to install and use virtual Ubuntu Linux

YOU'LL NEED
› macOS 10.13 or later, Parallels Desktop 17 (£69.99, parallels.com)

Genius tip!

› Instead of using Time Machine to back up VMs, copy them when they're shut down at night, using a utility like Carbon Copy Cloner.

Intel Macs can run Windows in Boot Camp, but there's no equivalent on Apple silicon Macs, where the best way to run Windows or Linux is in a virtual machine (VM) in Parallels Desktop.

Until the release of Windows 11, running that or Windows 10 on an M1 requires you to join Microsoft's Insider Program to gain access to pre-release versions for ARM systems.

There are far more operating systems available to Intel Macs, including many versions of Windows and macOS.

Fortunately, Linux is simpler, as Parallels offers four different distros for ARM systems, including the excellent Ubuntu. Until native Asahi Linux ships, that's the best way to run Linux on your M1.

Intel Macs have a far wider choice of many different versions of Windows, half a dozen easy-install Linuxes, Android, and all versions of macOS from 10.7 to Monterey.

Easy installation

In each case, installing the VM is similar: download the right distro for your type of Mac and run its installer in the VM. This is most straightforward when Parallels already offers to do that in its Installation Assistant.

Once your VM is up and running, Parallels Tools then shares the folders in your Home folder, making it easy to transfer files, and integrates your guest operating system with copy and paste, and your Mac's hardware, including networking and printers. What you end up with is the best of both worlds without the need for any additional hardware, and you can tune VM performance to your needs.

Howard Oakley

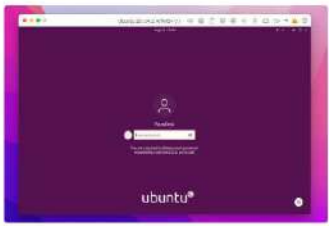
HOW TO Run a virtual machine with Parallels Desktop 17 ›

1 Download Linux

Open Parallels Desktop, and set up its extension and privacy when invited. If necessary, use the File/New command to open Installation Assistant. Select Download Ubuntu Linux at the lower left and click Continue.

2 Install Linux

When you create the first VM, Parallels will ask to create a VM hard disk image. Agree, and the 2GB Ubuntu installer will download and then be verified before it automatically installs into the new virtual machine.



3 Log in

The window then fills with details as it progresses, after which it boots the VM into Ubuntu Linux and presents the login screen. Click on the Parallels user and enter a new password, re-enter it, and Linux opens.

4 Install Parallels Tools

Enter your password to start Parallels Tools installation, then agree to restart the VM and log back in. Ignore any system program problems which might be reported, and decide whether to set up Livepatch as offered.

5 Set up Livepatch

For Livepatch, follow the instructions to set up a Canonical account. Collect your email response from your macOS mail client, copy the link from there and paste it into Firefox in Linux to complete the setup process.

6 Access shared folders

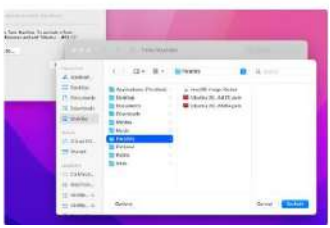
With Parallels Tools, the VM shares your macOS Home folders, making it simple to transfer files between systems. To access those in your VM, open Parallels Shared Folders on its Desktop, which includes iCloud Drive.

7 Shut down VM

To access Linux apps, use the icon at the bottom left of the window. To configure its settings, shut it down using the Power button on the right of the Linux menu bar. It briefly displays another stream of text.

8 CPU & Memory

In the Parallels menu bar tool, open its Control Centre. Click the gear icon on the VM you want to change settings for. In CPU & Memory of the Hardware tool you can adjust cores and memory to tune VM performance.



9 Exclude from backups

Select the Backup tool and Open Time Machine Preferences, agreeing to let Parallels have access to the pane. Click the Options button and locate the Parallels folder in your Home folder. Add that to the exclusions.

How to isolate instruments

Learn how to play a song by focusing on your instrument of choice

IT WILL TAKE
› 30 minutes

YOU WILL LEARN
› How to use Neural Mix Pro to help learn how to play a song

YOU'LL NEED
› Neural Mix Pro, macOS 10.14.4 or later

Whether you're just starting out learning an instrument, or you're an old hand learning a new song, technology has lots of ways to help you get there more quickly.

One of the ways software can help is in isolating a part such as a guitar or keyboards, so that you can focus on learning that without being distracted by what else is happening in the song. It can also loop a section, such as a guitar solo, so that you can listen over and over until you nail it. And perhaps most useful of all, it can change the tempo of a track without changing its pitch, so you can slow the solo right down and pick out every note.

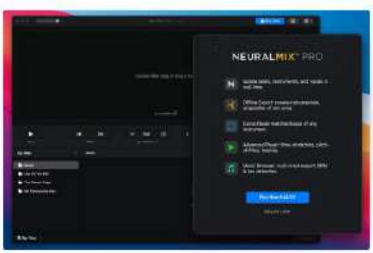
There are many tools that can do all of these things, but we've chosen Neural Mix Pro from Algoriddim for this tutorial. It's a free download from the Mac App Store, and while it costs £44.99 to unlock all of its features, everything we cover here can be done with the free version. So strap on your guitar, or sit behind your keyboard and let's get started.

Kenny Hemphill

Genius tip!

› While Neural Mix Pro works with iTunes, it doesn't work with DRM-protected songs in the Music app, even if you download them on to your Mac.

HOW TO Use Neural Mix Pro ›



1 Get started

Once you've downloaded it from the Mac App Store, launch Neural Mix Pro. Click Get Started. On the next screen, be careful to click Maybe Later, which is not highlighted, unless you really want to buy the full version.

2 Import Music

We're going to import tracks stored on our Mac. If you still have iTunes installed, you can also import from your iTunes Library. Click My Music at the bottom left of the window and choose My Files. Click the '+'.

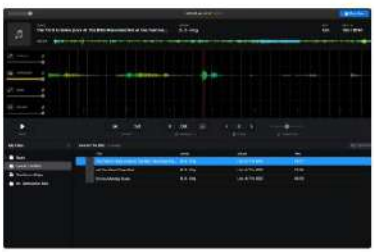
CONTINUED... Use Neural Mix Pro

3 Add a track to learn

Navigate to the folder that contains the tracks you want to learn and select it (you can't select the tracks themselves). Click Add. Click the folder in Neural Mix Pro then double-click the song in the track window.

4 Isolate an instrument

Press the Spacebar to start the song and press it again to pause. You'll see on the left four sliders labelled Vocals, Harmonic, Bass, and Drums. Click the Mute button next to all the tracks except the one you want to isolate.



5 Start playing

Press the Spacebar again and you'll notice that the other instruments have been muted or are at least quieter. You'll also notice that the key in which the song is recorded is displayed at the top of the window, along with the tempo.

6 Set a start point or loop

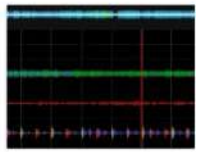
To skip the intro, start the song again by clicking the 'Go to start point' button and when it reaches the part you want to start learning, click Set. To loop a section, Click In at the start of the section and Out at the end.

7 Change tempo or pitch

If the song is too fast for you to learn comfortably, click the Tempo slider and drag it to the left. If the tempo is okay, but you want to change its pitch, click on an arrow either side of Pitch – each increment is a semitone.

8 Change volume

To change the volume of the whole song, use the slider at the top left of the main window. To change the volume of individual tracks, instead of muting them completely, use the sliders on the left.

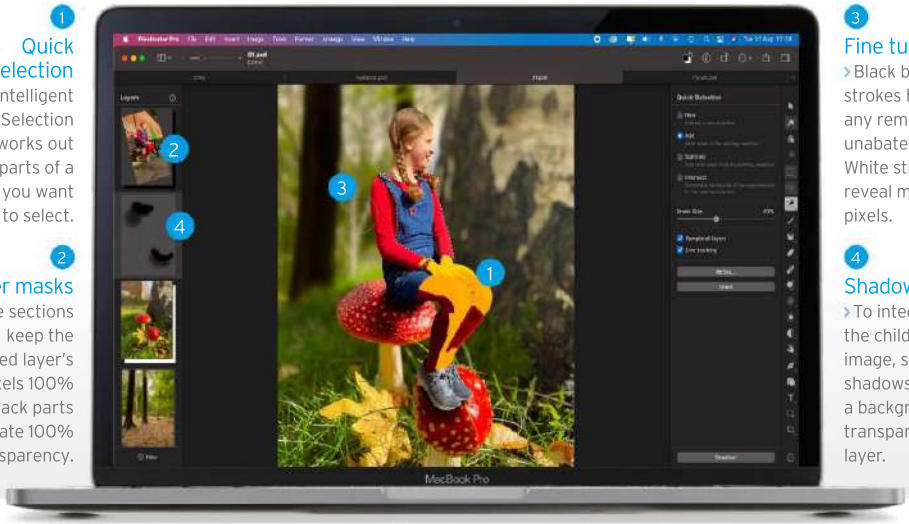


Jargon buster

Neural Mix is the name Algoriddim has given to its artificial intelligence technology that is used in Neural Mix Pro and Djay Pro AI.

Genius tip!

If you previously used iTunes Match to upload tracks to Apple's servers, you can download that in Music and it will work in Neural Mix Pro.


1
Quick Selection
The intelligent Quick Selection tool works out which parts of a subject you want to select.
2
Layer masks
White sections keep the attached layer's pixels 100% solid; black parts create 100% transparency.
3
Fine tune
Black brush strokes hide any remaining unabated pixels. White strokes reveal missing pixels.
4
Shadows
To integrate the child into the image, spray shadows on to a background transparent layer.
MacBook Pro

Produce a composite image

How to select, transform and combine multiple layers

IT WILL TAKE
15 minutes

YOU WILL LEARN
How select a complex subject, transform a layer's content, and use masks to combine layers

YOU'LL NEED
macOS 10.14 or later, Pixelmator Pro 2.1.2 (£34.99)

To create a successful composite image, make sure that the lighting is similar in every photo

Image-editing apps such as Lightroom do a fine job of fixing problems with colour, tone and composition, but to get really creative with your photos you need to be able to work in layers. Pixelmator Pro (pixelmator.com/pro) has a host of tools that enable you to select, transform and combine parts of different photos into a layered composite image – like popping a child onto toadstool, for example. In this tutorial, you'll discover how to use the intelligent Quick Selection tool to select and isolate a person from a complex background and then scale and transform them so that they look as if they belong in a different location.

Create convincing composite images by masking and transforming layers' contents.

You'll also learn how to fine-tune a selection by applying brush tips to layer masks. Layer masks enable you to hide or reveal a layer's contents in a non-destructive way. You'll also learn professional compositing tips to help blend the contents of multiple layers' together, such as adding shadows using brush strokes.

Pre-production

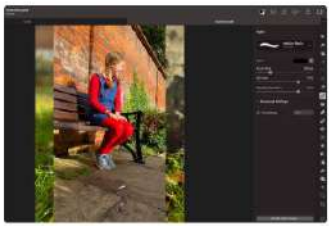
To create a successful composite image, you need to make sure that the lighting is similar in every photo that you're going to use. If the shadows in your source photos are cast in different directions, the lighting won't look convincing in the layered composite image. To create the assets for this project, we snapped the toadstool first and then posed the child in matching lighting conditions.

George Cairns

HOW TO Combine multiple layers ›

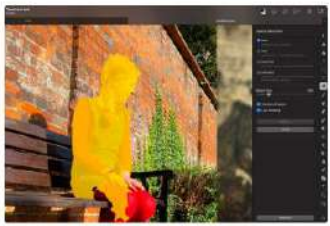
1 Open images

Launch Pixelmator Pro. From the welcome screen click either the 'Open an Image from Photos' icon or 'Browse images on your Mac'. Here we've opened two iPhone sourced shots – a child on a bench and a toadstool.



2 Combine layers

Choose View > Layers > Show Layers to summon the Layers panel. Click on the foreground photo. Choose Edit > Copy. On the background shot, choose Edit > Paste. Choose View > Layers > Thumbnails for a clearer look at both layers.

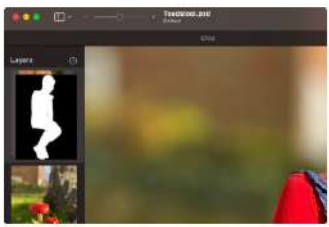


3 Start selecting

Press Q to select the Quick Selection tool. Click the New button. Set Brush Size to 20%. Begin spraying over the subject. The tool should be able to recognise the outline of the subject. Selected areas will turn yellow.

4 Continue selecting

When you stop spraying, the yellow patches will turn into a selection marquee. To select more of the subject, click the Add button and continue spraying. Click Subtract and spray to remove pixels from the selection.

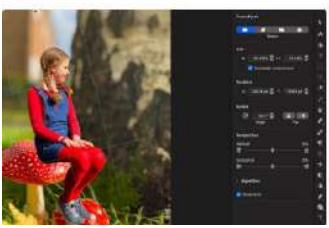


5 Add layer mask

Once you have made a selection, choose Format > Mask > Add Mask. The selection marquee is converted into a monochrome layer mask. The mask's black areas make the layer's corresponding pixels transparent.

6 Modify the mask

The edge of the selected figure may look a little jagged and some of the original background pixels may still cling to its edges. Grab the Brush tool. Set its colour to black. Spray over unwanted edge pixels to hide them.

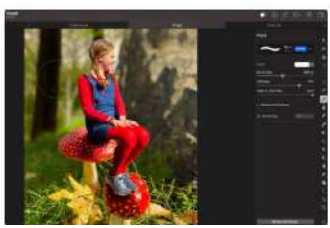


7 Transform layer

Spray a white brush to restore missing bits of your subject. In the Layers panel, click on the layer icon (instead of the mask). Press ⌘+T to activate the Transform tool. Scale and rotate the subject to fit the background.

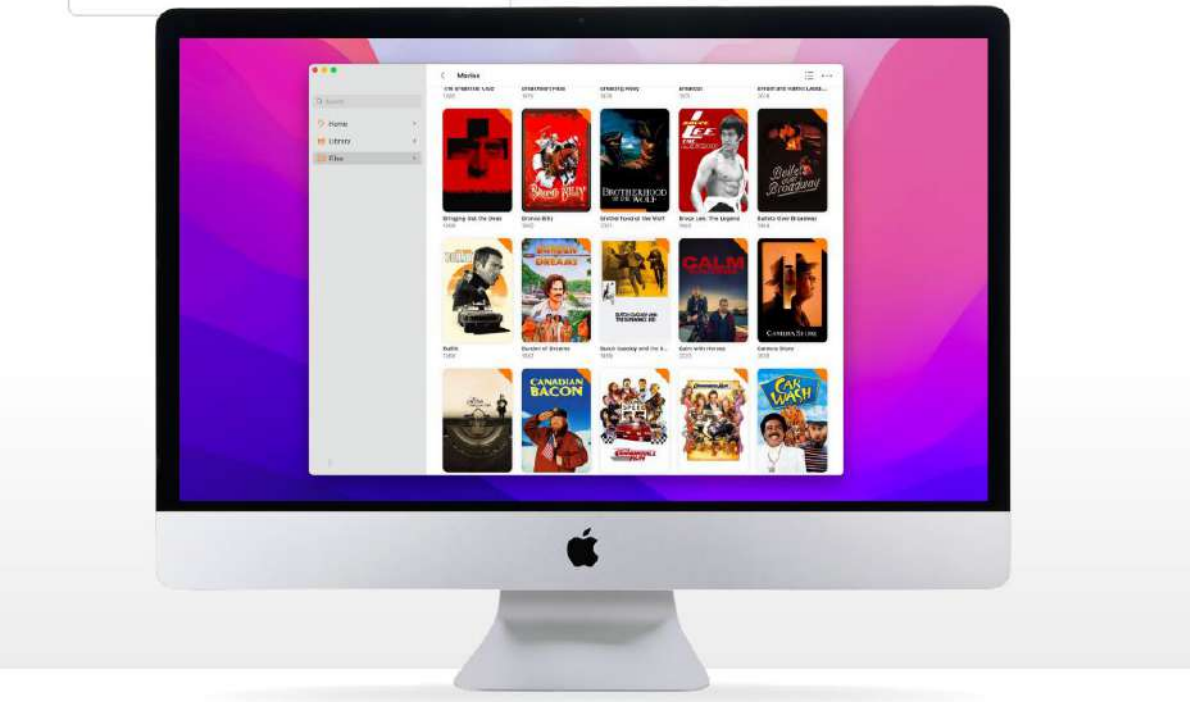
8 Add shadows

Click the '+' icon in the Layers panel to add a new transparent layer. Press B to activate the Paint tool. Choose a suitable brush tip Size with a soft edge, then spray shadows onto the mushrooms to make the child interact with them.



9 Finishing touches

To place the girl in a forest, we pasted a tree picture on to a new layer. We then added a mask to the toadstool layer and applied a black brush tip to the mask to reveal some of the forest on the background layer.



Stream your movies

Watch and manage all your local movie and TV files with Infuse 7

IT WILL TAKE
› 10 minutes

YOU WILL LEARN
› How to set up local movie libraries, edit metadata, and create playlists

YOU'LL NEED
› macOS 11 or later, Infuse 7, some digital movie or TV files

You can point Infuse at almost any drive or folder, locally and in the cloud

Many people have movie and TV collections ripped from DVDs or other sources, often in formats that QuickTime doesn't natively support. Infuse 7 (free, offers IAPs) is an application for macOS, iOS and tvOS that lets you stream digital video files on your local network to your devices without any conversion required. Infuse can play pretty much any video file right off the bat. Its only real restriction is an inability to play purchased iTunes videos because of the digital protection.

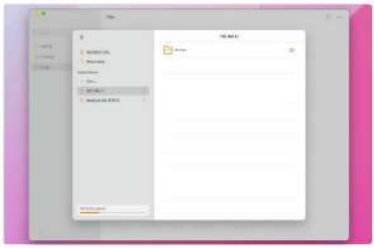
Infuse intelligently identifies episodes within TV series and sorts them for you based on seasons and episodes with full metadata and artwork.

Free functionality

Movie collections can use up a lot of space, but you can point Infuse at almost any drive or folder including networked hard drives, local hard drives and, with a Pro subscription (£0.79 per month), stream directly from cloud services like Google Drive, Dropbox and so on. A great deal of functionality is included with the free version, though expanded format support and playback sync across devices are two more reasons to go for a subscription.

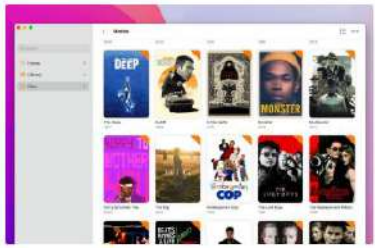
Folders full of movies can suffer from inconsistent file naming but Infuse automatically scans your library and pulls down all relevant metadata including artwork. If it makes a mistake, you can manually search for the correct title. Similar in many ways to Plex, some people find Infuse a cleaner and simpler streaming solution. **Hollin Jones**

HOW TO Set up and stream with Infuse



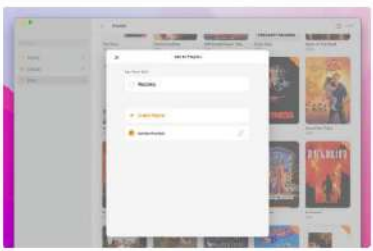
1 Connect a folder

In the Files tab, click to add a new video location. You will see hard drives connected to your Mac as well as those available on your network. Click through to locate the library folder you want to use as a source.



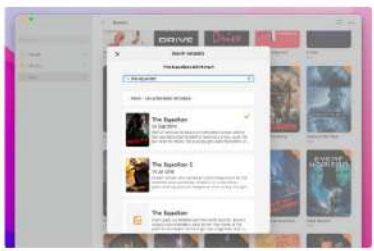
2 View your movies

At the top level of the folder, click the star icon to add it as a favourite. Then back in the main Files tab, you'll see it appear. Click into the folder and you'll see your movies or TV shows, as Infuse downloads metadata.



3 Set up playlists

You can add more folders for example to add a library of TV shows in a separate master list. To create a playlist, ctrl-click a movie and select Playlists then click to create a new playlist, assigning it a name.



4 Correct any errors

The playlist appears under your library tab and you can add more movies. If Infuse has downloaded the wrong metadata, ctrl-click the file and select Edit Metadata. In the Search box, type the title you want.

5 Manage the display

Select the correct information from the list. Since sometimes movies have the same name this is a quick way to clear up mistakes. You can also change the sort order of movies between date added and alphabetical order.

6 Get a handle on your library

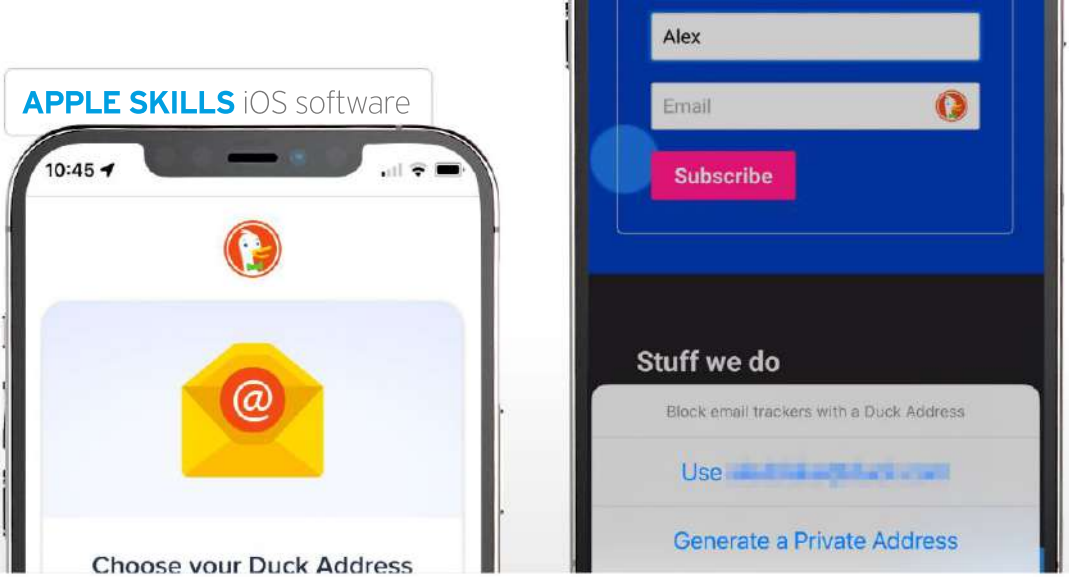
Infuse automatically scans the library folders you have chosen but if you ever have problems, the Library tab of the Preferences section can be used to force a new, full scan or refresh all metadata.

Jargon buster

›Shares are any folder you access that contain video files. These can be local or in the cloud and open or password protected. Add as many as you like.

Genius tip!

›During playback, click the Settings icon to access a menu where you can change many aspects of video and audio behaviour including upscaling.



Hide your email address

Get easy privacy protection for free – no new inboxes required

IT WILL TAKE
15 minutes

YOU WILL LEARN
How to protect your email privacy

YOU'LL NEED
DuckDuckGo app (optional), DuckDuckGo Privacy Essentials browser extension (optional)

Genius tip!

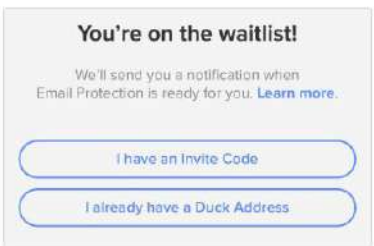
DuckDuckGo's Email Protection works across browsers and operating systems. If you have a PC or an Android phone, it will work there.

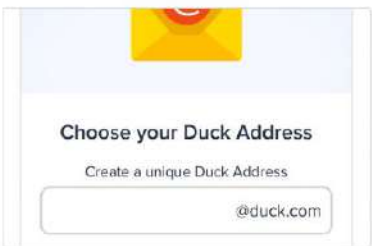
Apple made waves when it introduced Sign in with Apple, the service that lets you use dummy email addresses in online forms and then have everything forwarded to your regular address.

Now DuckDuckGo (free) is offering a similar Email Protection feature. As well as enabling you to sign up for websites and newsletters using randomly generated email addresses, the service also strips any incoming mail of privacy-breaking trackers before it reaches you. Sign up for a free @duck.com email address, then use it when you register for newsletters and DuckDuckGo will forward mail to your normal email address, free from tracking pixels and cookies. There's no need to remember new passwords or use a new inbox.

At the time of writing the feature is in beta, but you can sign up for beta access in the DuckDuckGo app. For now, Email Protection is not available in Safari, but works in Firefox, Chrome, Brave and Edge, and of course the DuckDuckGo app. **Alex Blake**

HOW TO Use Email Protection


You're on the waitlist!
We'll send you a notification when Email Protection is ready for you. Learn more.
I have an Invite Code
I already have a Duck Address



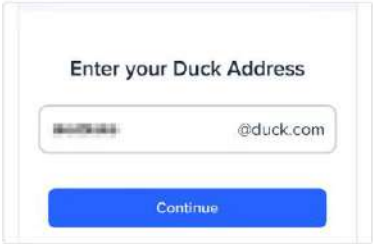
1 Download DuckDuckGo

Download the DuckDuckGo Privacy Browser app from the App Store. Open the app and tap '...' in the bottom-right corner, then tap Settings > Email Protection. Tap 'Join the Private Waitlist' and follow the prompts.

2 Register your account

When you get a beta invitation, sign up for a DuckDuckGo email address and choose where emails will be forwarded (you can use your main email account). Emails are stripped of trackers then forwarded to your address.

CONTINUED... Use Email Protection



3 Enable Email Protection

Open the DuckDuckGo app and tap '...' in the bottom right. Tap Email Protection, then tap 'I already have a Duck Address'. Enter your @duck.com address, tap Continue, then enter the confirmation code sent to your inbox.

We scour 100+ sources so you don't have to. Culture, science, sports, politics, business, and more - all in a 5-minute read.
JOIN FREE
Join 900,000+ daily readers. 100% free, unsubscribe anytime.

4 Ready to go

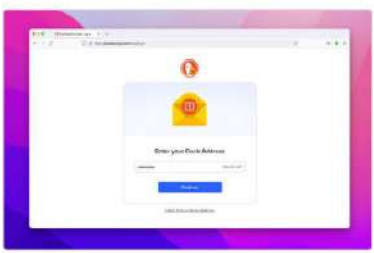
Email protection is now enabled in DuckDuckGo's web browser app. When you find a sign-up form while browsing a website in the app, enter your @duck.com email address instead of your normal one to get protected.

5 Trackers blocked

When you get an email sent to this address, it will arrive in your everyday inbox (such as Gmail or Yahoo) with a note inside telling you how many trackers DuckDuckGo removed. Tap the banner for more info.

6 Random email address

You can also generate a random email address in the DuckDuckGo app. Just tap the DuckDuckGo icon in a form and tap Generate a Private Address. This still forwards mail to your regular inbox and removes trackers.

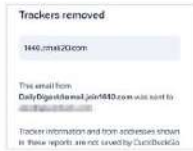


7 Get it on your Mac

Email Protection isn't limited to the app. On your Mac, open a web browser and head to duckduckgo.com/email/login. Enter your @duck.com address and confirmation code. Note that this doesn't work in Safari yet.

8 Cross-browser protection

Once this browser is registered, you can use your @duck.com address with it, or use it to generate a random email address. Just click the DuckDuckGo icon in an email form and click 'Use a Private Address'.



Jargon buster

Many companies use **email trackers** to detect when you open their messages, where you are located, and more. DuckDuckGo removes these trackers.

Genius tip!

Some platforms need the DuckDuckGo Privacy Essentials browser add-on for Email Protection. If Email Protection won't work, try this add-on.

Master new audio options

Make the most of Spatial Audio and Dolby Atmos on your Apple device

IT WILL TAKE
› 30 minutes

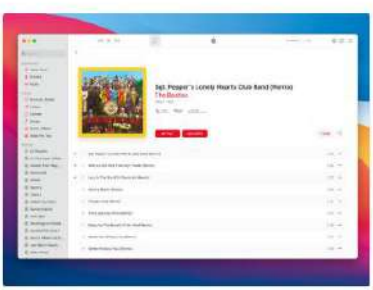
YOU WILL LEARN
› How to set up Dolby Atmos with Spatial Audio

YOU'LL NEED
› macOS 11.4 or later/ iOS 14.6 or later

Genius tip!

› In addition to iPhone and iPad, dynamic head tracking is now available on Apple TV 4K and M1 Macs (when used with AirPods Pro and AirPods Max).

Apple has made several announcements about music quality, including Spatial Audio and Dolby Atmos over the last few months, and it's all getting a little confusing. In a nutshell, Apple Music on the most recent versions of macOS, iOS and iPadOS now allows you to to play tracks that have been encoded in Dolby Atmos format. While AirPods (including AirPods Pro and AirPods Max) and supported Beats headphones equipped with Apple's H1 or W1 chips can be set to play Dolby Atmos tracks automatically. Dolby Atmos will also work on most other headphones – although you'll need to activate the feature in those instances manually. In addition, most iPhones, iPads and Macs made since 2018 include automatic support for Dolby Atmos.

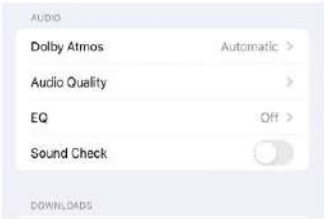


Albums that weren't originally mixed in Dolby Atmos must be remastered to take advantage of Spatial Audio.

Three-dimensional sound

Dolby Atmos is a surround sound format that makes audio feel three-dimensional. Apple's Spatial Audio is a complementary technology that enhances the surround sound experience, while also offering dynamic head tracking. Dynamic head tracking on AirPods Pro and Max enables the sounds you hear to retain their position in three-dimensional space even if you turn your head, in the same way they would if you looked to the left or right while at a gig or in the cinema. Dynamic head tracking finally arrived on Apple Music in September, with the launch of iOS 15. **Kenny Hemphill**

HOW TO Use Spatial Audio and Dolby Atmos >



1 Auto Dolby Atmos on iOS

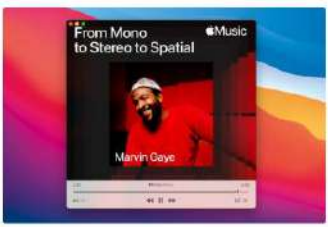
Tap Settings then scroll to Music and tap it. Tap Dolby Atmos then Automatic. When you listen to music using a pair of AirPods or compatible Beats headphones, songs will play in Dolby Atmos and you'll hear the spatial effect.

2 Always Dolby Atmos

You can still listen to Dolby Atmos and other Dolby Audio tracks even if you don't have supported AirPods or Beats headphones, although in this case you'll need to switch Music > Audio > Dolby Atmos from Automatic to Always On.

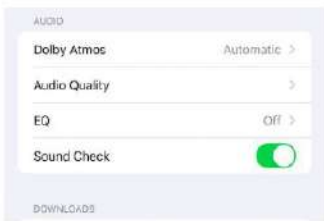
3 Auto Atmos on Mac

Launch the Music app. Click on the Music menu and choose Preferences. Select the Playback tab. Look for the Dolby Atmos setting about two-thirds of the way down the window, click the menu and choose Automatic.



4 Quiet tracks

You might find that Dolby Atmos tracks are quieter than stereo tracks and that when you turn the volume up for Dolby Atmos, the stereo songs are too loud. The answer is to enable Sound Check, which evens out volume.

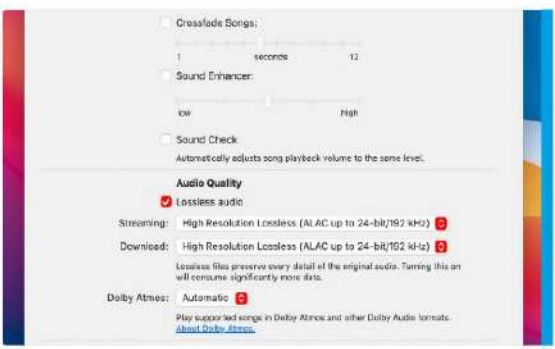


5 Sound Check on iOS

Launch Settings and tap Music. Scroll down to the bottom of the screen and toggle the switch next to Sound Check to the 'on' position. Now, when you listen to music, there will be no wide variation in volume between tracks.

6 Sound Check on Mac

Launch Music. Click the Music menu and choose Preferences. Select the Playback tab. Check the box next to Sound Check to normalise volume between songs. You can also set crossfading and enhancement from here.


Crossfade Songs:
seconds
Sound Enhancer:
Sound Check
Automatically adjusts song playback volume to the same level.
Audio Quality
Lossless audio
Streaming:
High Resolution Lossless (ALAC up to 24-bit/192 kHz)
Download:
High Resolution Lossless (ALAC up to 24-bit/192 kHz)
Lossless files preserve every detail of the original audio. Turning this on will consume significantly more data.
Dolby Atmos:
Automatic
Play supported songs in Dolby Atmos and other Dolby Audio formats.
About Dolby Atmos.

Lossless audio

Listen in even higher quality >

In addition to Spatial Audio with Dolby Atmos, Apple also introduced lossless encoding. This encodes tracks using ALAC (Apple Lossless Audio Coding) instead of AAC. However, Apple says Bluetooth doesn't support ALAC. So you'll need a Lightning to audio jack cable for iPhone, or USB-C to audio jack cable for iPad. You can listen to Apple Lossless tracks on your Mac using a pair of wired headphones or powered speakers, although for the highest audio resolution (24-bit/192kHz) you might want to invest in a digital to analogue converter (DAC).

Join Clubhouse audio chat

Find fascinating conversations on your device – or start your own

IT WILL TAKE
› 10 minutes

YOU WILL LEARN
› How to follow people, join rooms, and start your own conversations in Clubhouse for iOS

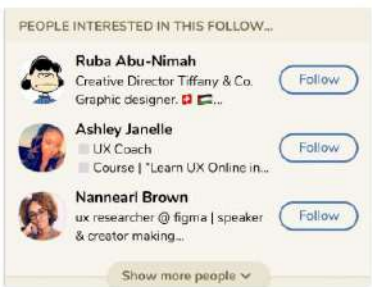
YOU'LL NEED
› Clubhouse, iOS 13 or later

Genius tip!

› Choose your interests when creating a profile or tweak them in settings. Don't forget to enable spatial audio if you use headphones!

If you've been paying attention to the tech world over the last year or so, chances are you've heard of Clubhouse. The immensely popular app centres on conversation 'rooms' hosted by 'clubs' – the idea is it's like a round table speaking event where everyone can take part.

Just join a room and you can listen to people chat about the topic at hand. Whether you want to learn something new or just hang out with some friends, Clubhouse's rooms are an excellent way to sit back, talk and listen in a world that's obsessed with short, speedy interactions.



Clubhouse's chatrooms are divided into topics, with tons of fascinating clubs and events hosted within each one.

Join the club

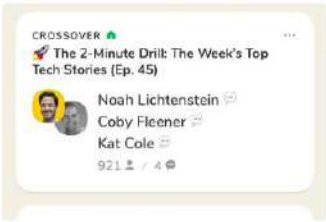
When Clubhouse first launched, it was known for its explosive growth despite being invite-only. Now anyone can join, opening up access to interesting spoken conversations on all manner of topics. You can dive straight in – for free, no less – and invite your friends to join you in the app's huge range of interesting chatrooms.

But it's not just for listening. Not only can you take part in any room you join, but you can start your own as well. Just pick a topic, invite some people, and away you go. The app lets you go live right away or schedule an event for the future.

In this tutorial, we'll show you the ins and outs of Clubhouse, from finding rooms to starting your own conversations, and some handy tips alongside. Before long, you'll come to see just why it's such a popular app on iOS.

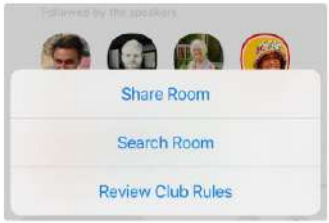
Alex Blake

HOW TO Get started with Clubhouse



1 Listen live

The app's home screen (called the Hallway) lists shows that are currently live. Tap a room to join it. You will be muted; tap the hand icon if you want to say something. Otherwise, sit back and enjoy the conversation!



2 Room activities

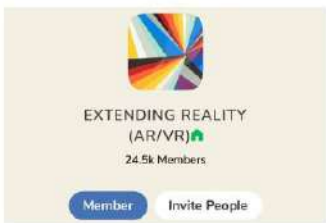
Once you're inside a room, tap the '+' icon to add someone to the session, or tap the paper aeroplane to send a direct message. Tap '...' in the top-right to share the room with others or search for a specific member.

3 Find clubs and topics

Back in the Hallway, tap the magnifying glass to find new clubs. At the top are suggested people to follow, while you can browse categories below. Each category has subtopics that let you drill down into a subject area.

4 Follow someone

For more details on people to follow, tap their name. You'll see their profile information and the clubs they are part of. Tap Follow to get updates on their activities, or the paper aeroplane to send a message.



5 Join a club

When you've found an interesting club, tap Join. If there are any club rules, you will need to accept them first; otherwise, you will join straight away. To leave, tap Member on the club's page, then Leave Club.

THU 9 SEP 01:00
One Year Anniversary: Extending Reality Club
From EXTENDING REALITY (AR/VR)
w/ Amy LaMeyer, Joanna Popper, Nicole Lazzaro, Maddie Callander & Cathy Hackl — Join us as we celebrate a year of weekly conversations about #AR #VR. We will take a look back on what has changed over the past year and what we are looking forward to over the next one!

6 Club schedule

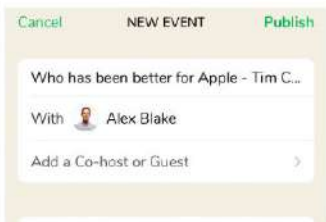
Each club's page shows its upcoming events. Tap an event to share it with friends or add it to your calendar for a timely reminder. Tap the bell icon and Clubhouse will alert you when the event is due to start.

7 Invite a friend

In the Hallway, you can invite your friends by tapping the envelope icon at the top, then tapping 'Search using my Contacts'. Or just enter a name or phone number into the search box, then tap Invite.

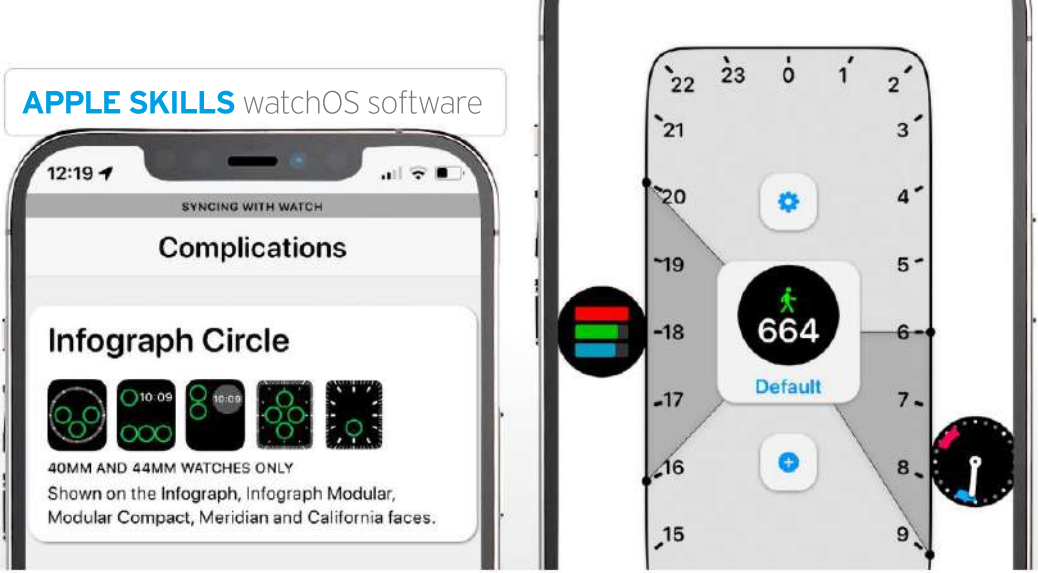
8 Start a room

To create a room, tap 'Start a room' in the Hallway. Choose if it will be open to all, just people you follow, or invite-only. Tap 'Add a Topic' to set an agenda, then tap 'Let's go' to start or 'Choose people' to add members.



9 Future events

You can also schedule a future event (this gives more options than in step 8). In the Hallway, tap the calendar, then tap the '+' button. Enter your event details, then tap Publish. You can share it too, if you want.



Create Watch complications

Tired of the standard options? Create your own with Watchsmith

IT WILL TAKE
› 5 minutes

YOU WILL LEARN
› How to create your own Apple Watch complications

YOU'LL NEED
› Watchsmith, iOS 14 or later

One of the Apple Watch's strengths is its level of customisation, particularly with complications. These are small widgets that adorn your watch face, adding nuggets of information at a glance.

Apple has loaded the Watch with lots of its own complications, and third-party apps can add their own too. But what if these don't quite hit the spot? Instead of making do with one that's subpar, you can get the free Watchsmith app and create your own complications.

With Watchsmith (free, offers IAPs), you can craft complications with a range of functions, from displaying the date in various formats to measuring your fitness and more. Almost everything can be tweaked, including the fonts and colours used. It even includes timed complications, which are only displayed during the hours you set.

Most of Watchsmith's functionality is available in the free version. If you want weather and tidal widgets, a premium subscription is available. **Alex Blake**

HOW TO Add a simple complication ›

1 Choose a style

Open Watchsmith and find the complication style you want from the Complications tab. In this example, we'll choose Infograph Corner. Tap it and you will see a page populated with one complication. Tap it.

2 Customise the look

Tap Default Complication. Choose a style, then tap the tabs at the bottom to edit more details. You can choose from predefined options to change the font, its colours, plus settings specific to each complication.

3 Final touches

Tap Back. You'll see your chosen complication with your changes in effect. Tap its name at the top to rename it, or tap Options to adjust its settings, such as whether it disappears when the Watch is dimmed. Tap Save.

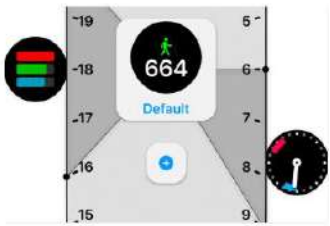
HOW TO Create a timed complication

1 Add a timed layer

Tap a complication, then tap Add a Timed Complication. On the clockface, drag the handles to set when the complication is active. Tap and drag the time block to a new place on the clockface for a quick time change.

2 Choose what runs

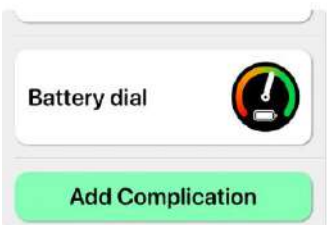
Tap the complication in the segment of active hours to edit its appearance. Next, tap the complication in the middle to set what is shown when the timed complication is not active. When you're done, tap Back.



3 Overlapping complications

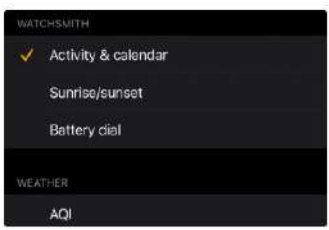
Tap the '+' button on the clockface to add another timed complication, select its hours, and change its style. Note that complications' hours cannot overlap each other. When you're finished, tap Save.

HOW TO Install complications on your Watch



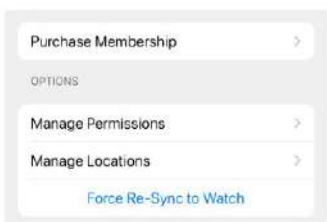
1 Run multiple widgets

Your Watch can install several custom complications from Watchsmith. When you have chosen a complication type (such as Infograph Corner), you can add more by tapping Add Complication and repeating the steps above.



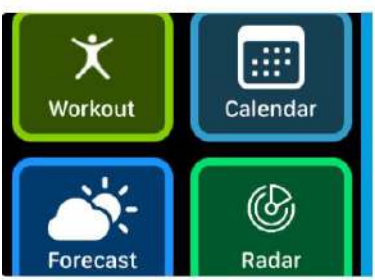
2 Choose a complication

Now open the Watch app on your iPhone, tap your active watch face on the My Watch tab, then scroll to the Complications section. Tap a complication, then scroll to Watchsmith and tap one to add it to your device.



3 Troubleshoot syncing

The changes to your complications should instantly be reflected on your Watch, but if not, tap 'Set as current Watch Face' under the Watch app's Complications section. Or tap Settings > 'Force Re-Sync to Watch' in Watchsmith.



Tap for more

Watchsmith's complications offer quick actions

Tap on a Watchsmith complication on your Apple Watch and you'll see it has a range of quick actions. You can start a workout, view your calendar, see the weather forecast, and much more. These actions are the same regardless of what type of Watchsmith complication is active and give you quick access to commonly used apps and features. Watchsmith should have asked permission to access data used by the quick actions when you first installed it, but if you need to do it again, open Watchsmith and tap Settings > Manage Permissions.

HOW IT WORKS

Reverse wireless charging

How your iPhone could one day charge your AirPods without wires

YOU WILL LEARN

- How wireless charging can be reversed to top up the charge in accessories such as Apple's MagSafe Battery Pack

With the launch of the new iPhone 13 at Apple's September event, we were hoping to see one much-wanted feature: reverse wireless charging. Unfortunately, while the technology has apparently been found in the iPhone 12 (according to the US Federal Communications Commission) and can be used to reverse charge Apple's MagSafe Battery Pack, it hasn't been made more widely available. So what is it and how does it work?

How wireless charging works

Wireless charging isn't exactly new: it was first demonstrated over 100 years ago by Nikola Tesla, and if you have an electric toothbrush you've probably got a wireless charger in the bathroom. The technology hasn't really changed much over the decades. It's just got more efficient. When we talk about wireless charging in a phone or tablet context, we're talking about using electromagnetism: it's possible to transmit electricity via radio frequencies, but it isn't powerful or practical enough for everyday use.

Electromagnetic charging consists of a transmitter and one or more receivers. The transmitter, which is your wireless charging pad or puck, creates an oscillating magnetic field. When they're close enough, that magnetic field induces a current in the coiled wire loops inside the receivers. That current can then be used to recharge the battery or even power small electronic devices.

The amount of power you can transmit is largely based on the size of your coils and the strength of the magnetic field. Because there isn't a great deal of room inside your iPhone or Apple Watch, which also charges wirelessly, the copper coil needs to be very small. That's why you have to sit your iPhone on top of your wireless charger instead of near it, and it's why

What you lose in charging speed you gain in convenience and reduced cable clutter

Key fact

- The speed of wireless charging will depend on the power that your charging pad delivers and the receiver in your phone can handle. For example, the iPhone 11 charges at 7.5W on Apple-approved Qi charging pads and 5W on others; the iPhone 12 charges at 15W on MagSafe (12W for the iPhone 12 mini) and 7.5W on standard Qi pads.

Apple's MagSafe charger uses magnets to clamp to the correct area of your iPhone (12 or later) or Apple Watch.

Three cheers for Tesla

The wireless charger in your iPhone owes a great deal to the inventor Nikola Tesla, whose 1897 steam-powered oscillator demonstrated that you could indeed use electromagnetism to transmit power without wires. According to reports, the oscillator shook Tesla's laboratory so much that the neighbours thought they were experiencing an earthquake.

In 1902, Tesla started on his grandest experiment: the Wardenclyffe Tower, a giant electrical transmitter that Tesla hoped would be the foundation of a worldwide power delivery system. Tesla believed that by injecting electric current into the Earth, he could amplify the Earth's own electrical charge and create waves that could charge anything anywhere as well as enable global wireless communications; he even envisaged sending images to devices without wires. Sadly the project was a grand failure, spiralling into debt after lighting up the sky with flashes of electricity for a few evenings in 1903 and never apparently operating again.

Tesla's dreams of a worldwide power delivery system resulted in just a few flashes of electricity.

Apple uses magnets to clamp your wireless charger to the sweet spot on your iPhone 12, 13 or Apple Watch. But if you increase the size of everything, you can increase the charging distance, so for example you can create a charging pad for electric cars that sits underneath the car and recharges the battery without having to be clamped to it.

The big downside to wireless charging is that it's slower than wired: Apple's MagSafe charges at roughly half the speed of a wired 20W charger, and earlier wireless charging options are slower still. The iPhone 11 can't charge wirelessly at more than 7.5W. But what you lose in charging speed you gain in convenience and reduced cable clutter.

Reverse wireless charging, as the name suggests, transmits power in the opposite direction – so you might use your iPhone to charge your AirPods or Apple Watch. And to do that, you need to take standard wireless charging and do a Missy Elliott on it: put your thang down, flip it and reverse it.

Works both ways

Reverse wireless charging has been popping up in a lot of Android phones. Huawei was one of the first firms to offer the technology in its Mate 20 Pro, and Samsung calls it PowerShare in its Galaxy S20 series phones.

With reverse wireless charging, the induction coil in the phone or tablet is reversible – so in addition to receiving a current from a magnetic field, it can also generate a magnetic field for another device to receive. It's much lower power than the normal wireless charging – most of the current phones with reverse wireless charging max out at 4.5W – but that's still enough to quickly top up the charge in your earbuds or smartwatch.

Multiple choice

Because this is a technology, there are of course multiple competing standards. The most commonly supported wireless charging standard is Qi (pronounced 'chee'), which Apple has supported since the iPhone 8. Qi is also the standard used by many public wireless chargers, such as the chargers you'll find in fast food restaurants.

The Qi standard is created, controlled and certified by the Wireless Power Consortium, WPC for short, which has more than 600 tech firms as members. In addition to Apple, Qi is the preferred tech of third-party accessory firms such as Belkin and Mophie.

The key benefit of Qi is its widespread compatibility: if a charger is Qi-compatible it doesn't matter who made the device you're charging, so you can charge your iPhone on the same pad as an Android phone and vice-versa. There's also a huge choice, so if you don't fancy Apple's MagSafe (or you have a pre-iPhone 12 iPhone, which doesn't have MagSafe) there's a ton of alternatives, often at much lower prices too.

Carrie Marshall

Key fact

Smartphones are very short of interior space and they simply don't have room for large induction coils. That's not a huge problem for charging them but those small coils can't put out as much power as the ones in a dedicated wireless charging pad. That means your phone's reverse wireless charging will always deliver less power than your phone can receive.

GENIUS TIPS

EDITED BY **HOWARD OAKLEY**

EXPERT ADVICE

Our resident genius solves your Mac and iOS problems

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Email your queries and your questions to **genius@macformat.com**

Pesky spellcheck!

It's the little niggles that come to hurt most, like the spellchecker that doesn't know whether we should use there, their or they're, so often tries to miscorrect us. After days of that, I'd had enough and disabled checking completely. All my errors were then my own, which is comforting but not helpful.

Cupertinos, the term for these spellchecker miscorrections, goes back to the 1990s, when European translators found the unhyphenated word cooperation being changed to Cupertino.

When revisiting this, I found an option in the contextual menu which offered to learn my deviant usage. Oddly, learning better behaviour isn't always a choice in the Spelling and Grammar panel, but once taught this and my other quirks of English usage, it's surprising how much better these checks have become.

Which macOS upgrade?

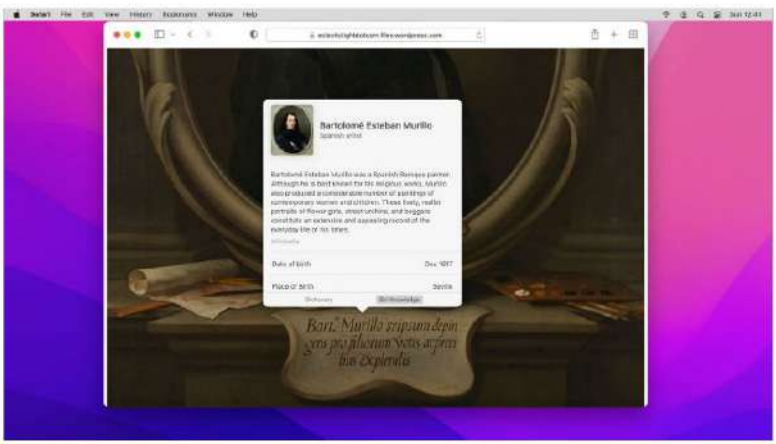
Q I usually run the last major version of macOS, and now have to decide whether to upgrade to Big Sur, or Monterey. Which should it be?

by MARIA MORRISON

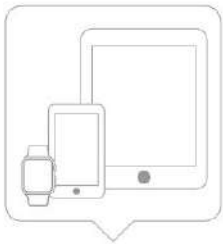
A Each of the previous macOS upgrades has brought major internal changes: switching the file system to APFS, killing all 32-bit software, dividing the startup volume into two, and in Big Sur, locking the system away altogether in a snapshot. Monterey is the exception to that particular rule, in that it consolidates rather than makes architectural changes, with all the problems those usually bring.

Entry requirements and incompatibilities are very similar between Big Sur and Monterey. The major difference for users is that, while Big Sur only gets security updates now, Monterey gets all the bug fixes in addition. In the case of macOS 11.5.2, that difference is significant, as it has no shortage of bugs which you would trip over sooner or later.

Give Monterey a couple of weeks to ensure that there aren't any hidden catches or urgent release of fixes in 12.0.1. Keep reading *MacFormat* to discover valuable new features such as Live Text, and then, if macOS 12 is looking good, consider going the whole way for once. For almost everyone, that should prove the better choice.



Not only does Monterey's Live Text recognise text brilliantly, it links words to further relevant information via Siri Knowledge.



iOS software

Swipe away your touchscreen troubles and rekindle your love of Apple's mobile devices

Quick-fire questions

Why do notifications sometimes miss out my Watch?

When iPhones or iPads receive notifications, they work out whether to pass them on to your paired Watch. They aim to minimise duplication, so you only receive a single notification on the device you're using. Lock your iPhone and they should arrive on your Watch instead.

How to download to my Mac from iPhone links?

The simplest solution is to buy copies of Transloader from the App Stores for your iPhone and Mac. Then copy and paste the download link into the app on your iPhone, and assign it to your Mac for downloading. This works remotely and even copes with downloads which require you to log in.

Syncing Photos isn't working

Q When I transfer new photos from my iPhone to my Mac, Photos always loads all the photos, then transfers many of them as duplicates of those already on my Mac. How can I get my iPhone to transfer only the newest batch of photos?

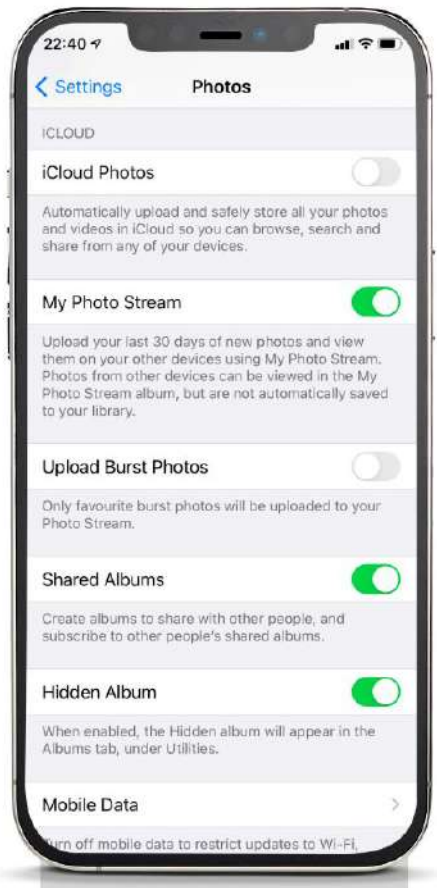
by STEVEN WILSON

A Provided that you haven't got iCloud Photos turned on, selecting your syncing iPhone in the Finder's Locations should provide access to options for Photos. There, choose to sync all photos and albums, and select a time period to automatically include photos.

There's one hidden feature which can cause problems, though: if you delete an automatically synced photo on your Mac, it's also removed from your iPhone when you next sync your iPhone.

Unless you need to sync your iPhone regularly for other reasons, it's much easier to sync photos using iCloud, and if you're careful as to how you do that, it needn't eat into your iCloud storage either. There are three different schemes on offer: iCloud Photos, My Photo Stream and Shared Albums.

iCloud Photos automatically syncs all photos on your Mac and all devices, as explained in bit.ly/mac371icloudphotos. However, that will eat into your iCloud storage allocation, so would be costly for larger Photos libraries. My Photo Stream, which doesn't count against that limit but only keeps photos for 30 days, is explained in bit.ly/mac371photostream. However, it isn't actually available with some more recent Apple IDs. Shared Albums are intended for use with other people, and are explained in bit.ly/mac371sharedalbums. You'll find the system limits imposed on My Photo Stream and Shared Albums detailed at bit.ly/mac371photolimits.


22:40
Settings
Photos
ICLOUD
iCloud Photos
Automatically upload and safely store all your photos and videos in iCloud so you can browse, search and share from any of your devices.
My Photo Stream
Upload your last 30 days of new photos and view them on your other devices using My Photo Stream. Photos from other devices can be viewed in the My Photo Stream album, but are not automatically saved to your library.
Upload Burst Photos
Only favourite burst photos will be uploaded to your Photo Stream.
Shared Albums
Create albums to share with other people, and subscribe to other people's shared albums.
Hidden Album
When enabled, the Hidden album will appear in the Albums tab, under Utilities.
Mobile Data

To ensure your Mac and other devices get your latest shots, enable My Photo Stream, which doesn't count against your storage allowance.

Email your queries and your questions to **genius@macformat.com**

Mac hardware

We help to solve your hardware hassles, from interrupted upgrades to running diagnostics

Quick-fire questions

How to replace the SSD in a MacBook Pro 2017 13in?

Provided the MBP has no Touch Bar and only two Thunderbolt ports, its SSD isn't soldered in. However, this is an expensive custom part. There are affordable third-party adaptors and substitutes available, but yours might also be eligible for a free replacement SSD from Apple. See bit.ly/mac371mbpssdservice.

Why won't my Mac Pro 5,1 update its firmware?

While 'cheese grater' Mac Pros with suitable graphics cards can be upgraded to Mojave, getting their firmware to update requires that they're first updated to High Sierra before going further, according to Apple at bit.ly/mac371mojavemacpro. This is a tricky issue best raised in a specialist online discussion group.

Thunderbolt ports on M1 Macs aren't full Thunderbolt 4, but confusingly do have full support for USB4.

Do M1s have Thunderbolt 3 or 4?

Q **Does my M1 iMac have two Thunderbolt 3 or 4 ports?**

by DARREN MILLER

A Strictly speaking, the two Thunderbolt ports on M1 Macs are Type 3 with added support for USB4, which is one of the requirements for Thunderbolt 4. Apple's wording isn't as precise as it could be, referring to 'Thunderbolt/USB 4', which appears ambiguous.

The main requirements for Thunderbolt 4 over those for 3 include support for USB4 (whose official name doesn't have a space), a minimum bandwidth of 32Gbps over its PCIe link, DisplayPort 1.4 with its support for dual 4K displays, and protection against physical security attacks using an Intel system.

While it's possible that the ports on M1 Macs reach those requirements for minimum bandwidth and displays, M1 Macs don't support two external displays (without additional peripherals) because of other hardware limitations in their display controller. As Thunderbolt is implemented within the M1 chip and doesn't use any Intel hardware in Apple silicon Macs, it seems unlikely that it can meet the requirement for security protection either.

One practical feature which comes with Thunderbolt 4 is the ability to use external hubs offering more than two Thunderbolt ports, which is true for M1 models. It's perhaps most useful to consider the M1 as having Thunderbolt 3 ports which also support USB4 and external Thunderbolt hubs, perhaps as Thunderbolt 3.5. There are advantages in buying cables certified for Thunderbolt 4, as they should work better, particularly in two-metre lengths; Thunderbolt 3 cables don't always work well with USB-C devices.

Email your queries and your questions to **genius@macformat.com**

When coupled with DisplayLink software, external docks with DisplayLink support can support additional displays for M1 Macs.

© Satechi

Multiple displays with an M1 Mac

Q Can my M1 MacBook Air drive two external displays?

by DAVE EMERY

A As the controller built into its M1 chip only supports one external display, unlike those in older Intel models, you can't do this without connecting additional hardware and a software extension.

However, if you're prepared to pay for a dock which features DisplayLink and install a DisplayLink driver for it, you can drive two or more external displays from your MacBook Air. First, check the specifications of external docks, or browse those listed at bit.ly/mac371dockingstations. Be very careful to choose one which is explicitly claimed to be compatible with M1 Macs, as some can be trouble. Then, from the DisplayLink site, download and install their latest driver.

This driver relies on an extension, which may be incompatible with future versions of macOS, although the latest release appears to work with Monterey. Users report that some macOS features, such as logging into your Mac using an Apple Watch and NightShift, may not work with the displays installed and active, but features such as 'clamshell' mode work fine.

What's best for cleaning my iMac's display?

› Try isopropyl alcohol applied sparingly with lint-free paper towel or cloth. Don't try anything abrasive, and use a minimum of liquid to ensure that none drops or runs off. Note: clean with the display off, when your iMac is shut down.

How to accelerate graphics on a Mac mini 2018?

› Recent Intel Macs support external GPUs (eGPU) containing graphics accelerators to connect to a compatible display, or simply for power and speed. A Blackmagic eGPU connected to a Thunderbolt 3 port provides a Radeon Pro 580 with 8GB of memory for £600.

Dead internal SSD

Q My trusty old MacBook Air 2013 refused to install a Security Update. When I ran Diagnostics it reported error VHD002, and now its internal SSD isn't working at all. Can I do anything other than recycle it?

by STEVE LEE

A The official interpretation of a Diagnostics code VHD002 is a fault with a storage device, in your case confirming that your Mac's internal SSD is dead. Although this isn't necessarily irreversible, you shouldn't trust a drive once it has suffered complete failure. Recycling is the only cost-free option, but for a modest investment your MacBook Air could continue to work for you.

The best option would be to replace its internal Flash storage using a kit designed specifically for that model. This should cost less than £100 and, provided you're careful, it's not difficult to fit it yourself as shown at bit.ly/mac371mbssdreplace.

You could buy a SATA SSD and fit that inside a basic case, which should be cheaper. The difficulty here is connecting the drive to your Mac: Thunderbolt 1 cases are pricey and hard to find, but a cheaper USB-C case would require a costly Thunderbolt 1 to USB-C adaptor, or be connected to one of the MacBook Air's slower USB ports, which only manage 5Gbps at best.

All Intel Macs can run completely from external disks even when their internal disk has failed and is unusable.

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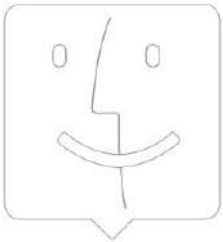


macOS

Shine a spotlight on the solutions to your most irritating Mac problems

Quick-fire questions

How should I clean my Mac's caches out?

You shouldn't need to, although they can malfunction or you might want to rebuild items like font caches. Start up in Safe mode, with the ⇧ key held (or via M1 Recovery), let your Mac run for a couple of minutes, then restart normally. This can cure various problems, and should be harmless.

How can I check for errors in my Mac's log?

The log is now busy and can contain tens of thousands of entries every minute, making this difficult. The bundled utility Console works mainly with a live stream of messages, and makes it hard to look back. Free apps Ulbow and Mints show log history; they're at bit.ly/mac371logutilities.

Using 32-bit apps with Big Sur

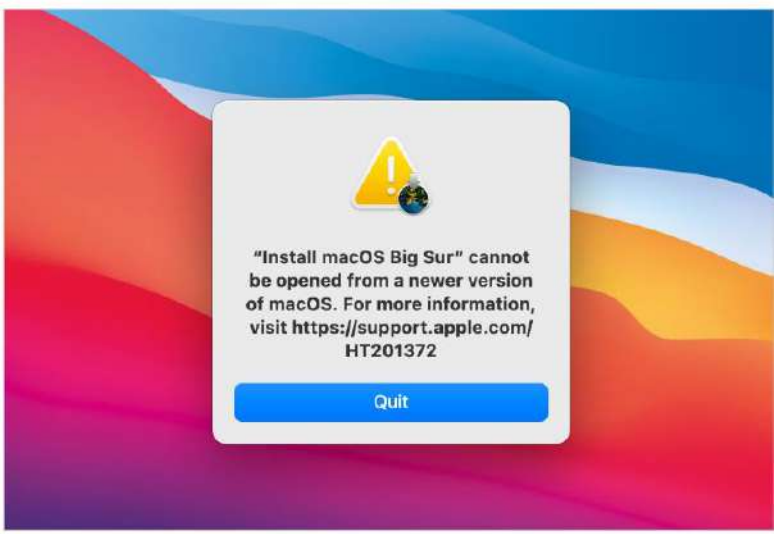
Q I recently upgraded to Big Sur, but have now discovered that I need to use an old 32-bit app. What's the best way to be able to run Mojave as well?

by DAVID NELSON

A There are two good solutions, depending on whether you want simultaneous access to both the old app and your current ones. If you do, then you should run Mojave in a virtual machine from Parallels Desktop, VMware, or another virtualiser. This is quick to set up, and simplest in Parallels Desktop, which will install direct from a downloaded Mojave installer app, as listed at bit.ly/mac371macoslegacy.

If you don't need that degree of access, but just want to be able to start up in Mojave occasionally, then you can install a copy on an external drive, or even, if you prefer, on a volume or in a container/partition on your internal storage.

Recent versions of macOS won't let you run older installers such as that for Mojave, though. To do that, you must make an external bootable installer, using a USB flash drive, or a partition on an SSD, perhaps. Apple provides full instructions at bit.ly/mac371macosinstall. You can then set up your old app and anything else you need there, and switch between macOS using the Startup Disk pane. One snag with this is that you'll find that Mojave doesn't understand Big Sur at all, so you must avoid using any of its tools to alter anything on your Mac's internal storage, apart from copying files which you need.


"Install macOS Big Sur" cannot be opened from a newer version of macOS. For more information, visit https://support.apple.com/HT201372
Quit

You can't run older macOS installer apps in recent version; install them from an external bootable installer disk instead.

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To use Live Text's advanced OCR, first export a high quality image of each page, such as 300dpi PNG.

Open that image in Preview and you can select its recognised text, then copy and paste it into any text editor.

Live Text on PDF files

Q How to use Live Text on a PDF document?

by LIZ BARKER

A Monterey's Live Text converts words or letters found in images to text which you can then paste into documents or look up. It only works on images, such as JPEG or PNG files, on which it performs advanced optical character recognition (OCR).

Although PDF documents using scans retain the original images, they're stored as special objects within the file, not as readily accessible images like photographs. That stops Live Text from performing OCR on them.

Normally, if scanned images in PDF have already undergone OCR to create PDF text, it's better to stay with that text. If you want to try Live Text to see if it's any better, you'll have to export each page, or make screenshots of them, and use those images with Live Text.

How to open my encrypted disk without a password?

› If it's an APFS (Encrypted) volume or encrypted by FileVault, and you didn't set up a Recovery Key, you're out of luck unless you're a government security agency. Even then, only the password can unlock an encrypted volume.

Why does spellcheck dislike 'there' so often?

› With three words to choose from, the macOS spellchecker often gets this wrong. As it's correctly spelled, you can't add it to your dictionary. Select the word and click the Learn button in the Spelling and Grammar panel.

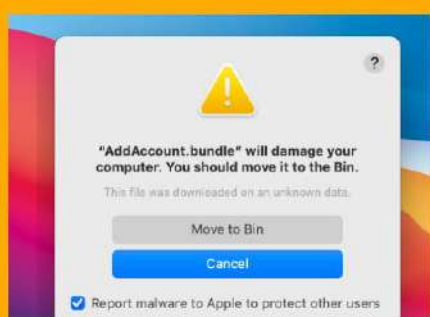
Is this app malicious?

Q When my Mac installed a recent security data update, it reported that a Citrix app was malicious and wouldn't run it. Has my Mac got malware?

by EVAN CROSFIELD

A Almost certainly not. The reason that this happened goes back a few years, and is all about security Certificate Authorities. Normally, Mac software is signed using certificates issued to developers by Apple, but that isn't an absolute requirement. Over five years ago, certain tools developed by Citrix and other developers relied on and included other components which were signed not with Apple certificates but using independent certificates relying on Symantec as their Certificate Authority. Since then, for other reasons, Symantec has ceased being trusted as a Certificate Authority. macOS stopped trusting the certificates it issued over a year ago, but it's rare for existing apps to have their certificates fully checked.

Recently, macOS security updates caused these apps to undergo deep checks, in the course of which, Macs have discovered that they had been relying on certificates which are now no longer trusted. The Gatekeeper system in macOS then reports them as being damaging, which they're not, and refuses to run them. Contact Citrix for updated versions which no longer rely on the Symantec Certificate Authority, and that software should run fine again. The same applies to other products which have similar problems.


"AddAccount.bundle" will damage your computer. You should move it to the Bin.
This file was downloaded on an unknown date.
Move to Bin
Cancel
Report malware to Apple to protect other users

This warning implies the app is malware, but it's not; its signing certificate relies on a now-untrusted Certificate Authority.

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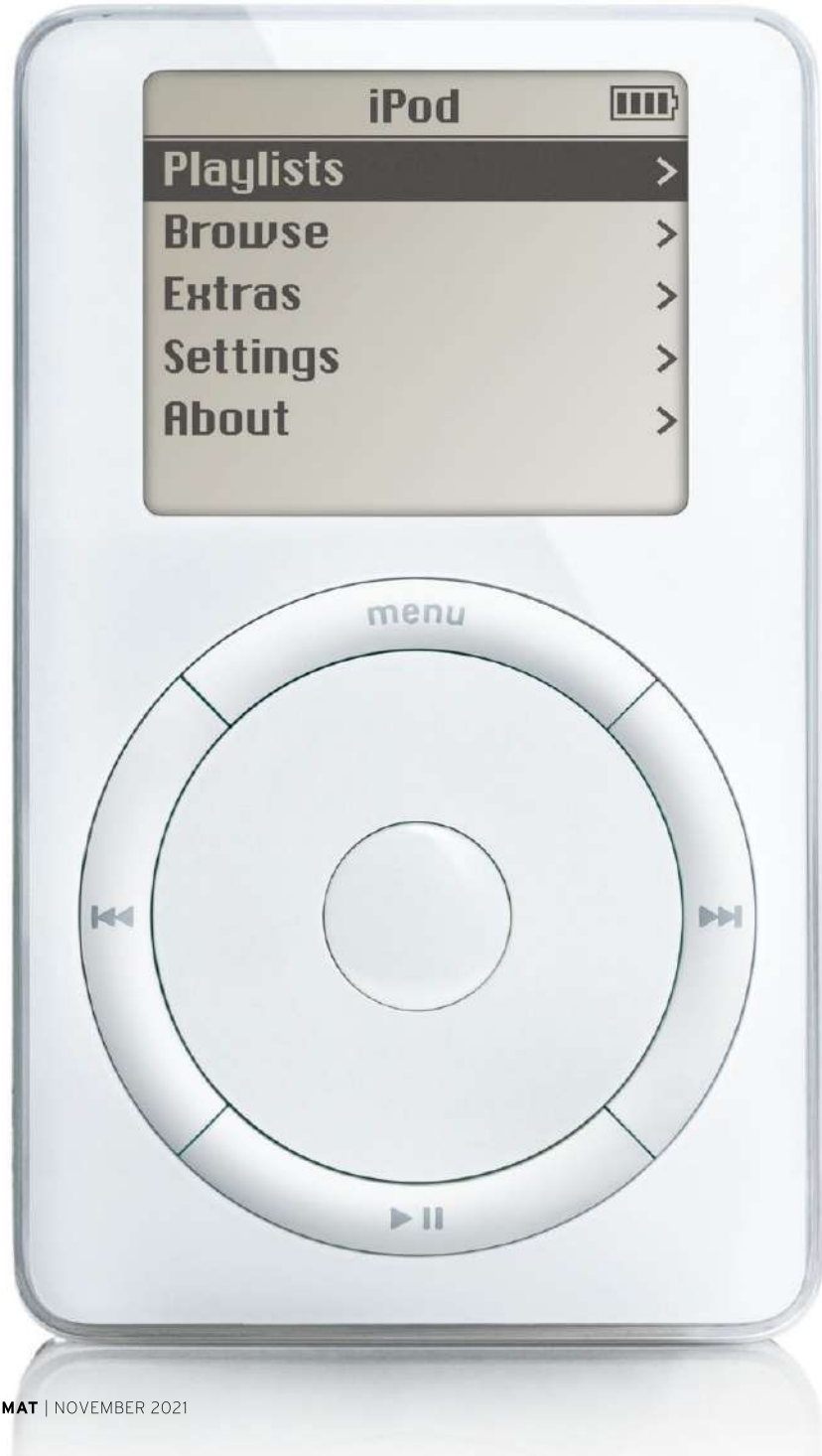

iPod
Playlists
Browse
Extras
Settings
About
menu

iPod @ 20

HOW APPLE CHANGED THE MUSIC BIZ

Apple launched the first iPod 20 years ago this month – what happened next changed the way we consumed music and the music industry forever...

Written by Carrie Marshall

All together now... "It was 20 years ago today that Apple taught the world to play." That's when it launched the iPod, a little music player that would have an enormous impact.

The iPod wasn't just a Walkman for the 21st Century. By putting 1,000 songs in our pocket it changed the way we related to music: instead of carefully choosing your tracks in advance, all your music was always available. Its instant skip control was a fatal blow to the many albums that were more filler than killer, enabling you to listen to the bangers without also having to endure the clangers. And the combination of iPod, iTunes and the iTunes Music Store completely changed the way we discovered and bought our music.

The iPod caused seismic changes in the music industry, made Apple more than just a really great computer company, paved the way for the iPhone and iPad and only occasionally tried to force unwanted U2 records on us. Not bad for something that was famously dismissed by one reviewer as "No wireless. Less space than a Nomad. Lame." when it was first announced.

As we'll discover over the next few pages, the iPod story is a very Apple story: it's a mix of innovative technology, smart decisions, Steve Jobs asking for the impossible, Microsoft driving around in a clown car going 'Honk! Honk! Honk!' and the odd bit of hardware sleeping with the fishes. From the OG iPod to the latest iPod touch, this is the story of a billion soundtracks.

How Apple 'invented' the iPod

Amazing ideas for music on the go, and the wrath of Jobs

iTunes was the killer app for the iPod; it made organising and transferring your music completely effortless.

You can start a musical revolution with three chords, or three words. Words like 'rip', 'mix' and 'burn'. That was the slogan Apple coined in 2001 as part of a new strategy: make the Mac a digital hub for absolutely everything. And at the heart of that hub was a new app called iTunes, which enabled you to rip music to your Mac and burn it to CD.

Apple didn't invent iTunes. Former Apple engineers Bill Kincaid, Jeff Robbin and Dave Heller did, and they called it SoundJam. It was designed to play MP3 music files on Macs, and Steve Jobs liked it so much he acquired the rights to it and hired Jeff Robbin to develop it into an Apple application.

Apple was late to the digital music party. Duran Duran released an MP3 single, *Electric Barbarella*, in 1997; by 2001 the file sharing wars were in full effect after two years of dodgy downloads via Napster and its imitators. But while music fans were mad for the new MP3 format, which made music files much smaller and therefore faster to download, tech firms and the music industry were achingly slow to react to what looked awfully like the future of music.

While music fans were mad for MP3, tech firms and the music industry were achingly slow to react

Although Apple admitted it was late to the party – iTunes launched on 9 January 2001 – Apple always prefers to be the best, not the first. "iTunes is miles head of every other jukebox application," Steve Jobs said of the launch. "And we hope its dramatically simpler user interface will bring even more people into the digital music revolution." One of its key features was its ability to "download songs to popular MP3 players from Rio and Creative Labs". Six months later that list would be expanded to include another player: the iPod.

Apple had no experience in making audio products, but by this point it had plenty of experience in using other people's audio products with pre-release versions of iTunes. And they were, as Steve Jobs put it, "crap". That was partly because they had limited storage and/or terrible design, but it was also because most of them used the really slow USB 1.1 standard to transfer songs. Apple had the answer to all of those things: a tiny 5GB hard disk from Toshiba, Apple's fast FireWire interface and Apple's hardware and software design skills. By studying existing devices and identifying their weakest points, Apple could learn from other firms' mistakes and make something that just works.

Burst the bubble

Like iTunes, the iPod wasn't quite an Apple invention. It was designed by handheld computing expert Tony Fadell, who had tried and failed to convince Philips of the potential market for digital music. Fadell had left Philips to create his own digital music firm, Fuse Systems, and Apple hired him as a consultant in January 2001 to work on 'P68 Dulcimer'. The project had that codename but that was about it: there were no plans, let alone a prototype. But Fadell already had a design for a digital music player;

Talking 'bout my generation

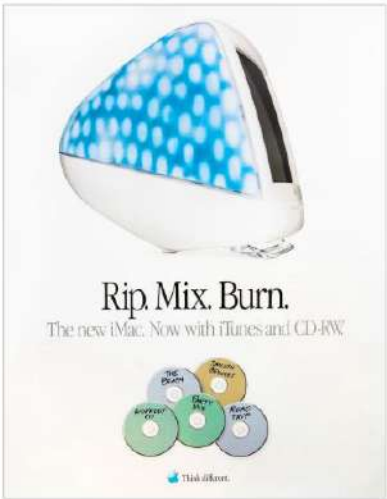
2001 iPod (1st gen)
- 5GB/10GB storage, mechanical scroll wheel and FireWire

2002 iPod (2nd gen)
- 10GB/20GB storage, touch sensitive wheel and PC compatibility

2003 iPod (3rd gen)
- 10/15/20/30/40GB, all-touch controls, dock connector

2004 iPod mini
- 4GB, USB/FireWire, click wheel controller

2004 iPod (4th gen)
- 30/40/60GB or 20/60GB with colour display, FireWire or USB



Apple's iMac made CD burning massive, but CDs were no match for the convenience of MP3.

unfortunately at Fuse he'd ran out of money to make it. So when the deep pockets of Apple were made available to him, he jumped at the opportunity to realise his vision. He pitched his iPod to Steve Jobs in March and became a full time Apple employee just a few weeks later.

The timescale of iPod development is truly incredible. There wasn't even a development team until May; the iPod was launched in October and started shipping in November. But it wasn't always an easy process. According to former Apple employee Amit Chaudhary, Steve Jobs wasn't impressed by an early prototype because it simply wasn't small enough. When the engineers protested that they'd made it as small as it could possibly be, Jobs sat silently for a moment and then stood up, iPod in hand, and dropped the prototype into an aquarium. As the iPod sank and bubbles rose from it, he said: "Those are air bubbles. That means there is space inside. Make it smaller."

Before iPod

Apple wasn't the first company to make a digital media player. You can bet it studied these devices in detail

MPMan F10 (1998)

The first portable MP3 player was this little one from Saehan Information Systems. It had 32MB of Flash memory and an LCD screen.

Diamond Multimedia Rio PMP300 (1998)

The RIO was like a prettier MPMan. It's more famous than the MPMan because the record industry tried to sue it out of existence.

HanGo Personal Jukebox PJB-100 (1999)

Developed by PC giant Compaq, the HanGo was the first hard disk MP3 player. You could put 1,200 songs in your pocket.

Samsung YEPP (1999)

Steve Jobs would have approved: the Yepp was made with the aim of being the smallest MP3 player on the market.

Creative Labs NOMAD Jukebox (2000)

For many, the NOMAD range were the MP3 players to beat. Despite their odd looks they were powerful and capable music players.

Sony Network Walkman NW-MS7 (1999)

It sounded better than the iPod, but Sony didn't support MP3 and used its own proprietary and expensive Memory Stick storage.

Cowon iAUDIO (2000)

Cowon's kept the digital music faith for a long time: it currently makes class-leading hi-res audio devices.

2004 iPod photo

4th gen spin-off, colour screen, pic viewing. 40/60GB, FireWire or USB

2004 U2 iPod

Limited edition black iPod with red click wheel, autographs and 20GB

2005 iPod shuffle (1st gen)

Flash! Aah-aah! 512MB/1GB, USB, no screen

2005 iPod mini (2nd gen)

4/6GB, more colours and longer battery life

2005 iPod nano (1st gen)

1/2/4GB, USB (FireWire for charging only), colour display

iPod and birth of the iTunes Music Store

Apple put 1,000 songs in your pocket. But where were we getting those songs from?

Digital music disasters: Microsoft, Zune and PlaysForSure

› Microsoft's response to the iPod was to copy it, make it brown and add some truly terrible desktop software. But its bigger mistake was PlaysForSure, a DRM platform that locked your music to Microsoft-approved devices just as DRM was falling out of favour with music.

The iPod was a big hit for all kinds of reasons. It was genuinely better than the competition, it was easy to use, and it had white headphones – headphones that would become the focus of an iconic ad campaign.

The first iPod campaign included one of Steve Jobs' pet hates: people. Jobs preferred not to use real people in ads because no one person would appeal to everybody. And this particular ad, according to Ken Segall, who worked on ad campaigns with Apple, was "uncomfortable to watch... it was a young guy trying to act cool, and doing so in a fairly pitiful way."

In 2003 Apple's ad agency Chiat/Day came up with the idea of using dark silhouettes of people with bright white headphones on primary coloured backgrounds. It was the advertising equivalent of the perfect pop song; Jobs hated it until he saw how many iPods it was selling. Something else happened in 2003 that sent iPod sales into orbit: Apple released iTunes for Windows. Apple had grudgingly enabled PC compatibility via the PC music app MusicMatch, but in 2003 Apple launched iTunes for Windows. Jobs joked that it was like "giving a glass of ice water to somebody in hell".

Jobs had been against making the iPod Windows-friendly, but while Mac sales were declining iPods were doing ever increasing

Welcome to the iTunes Store

1 **iTunes integration**

› The iTunes Music Store was integrated into iTunes itself, much to the annoyance of other download shops.

2 **iTunes Exclusives**

› The digital equivalent of in-store gigs. Canny artists would offer iTunes exclusives and early releases.

Talking 'bout my generation ›

2005 iPod (5th gen)
› 30/60/80GB, USB (FireWire for charging only), larger screen

2005 U2 iPod (2nd gen)
› A 20GB iPod photo this time. 2006 saw two more U2 iPods

2006 iPod nano (2nd gen)
› 2/4/8GB, anodised aluminium in six colours

2006 iPod shuffle (2nd gen)
› 1/2GB, smaller design, colour options added later

2007 iPod touch (1st gen)
› 8/16/32GB, USB, multi-touch and internet

2007 iPod classic (1st gen)
› AKA the 6th gen iPod: 80/160GB, USB (FireWire for charging only), anodised metal

› Image credit: Microsoft

3 **Celebrity Playlists**

Over the next eight years Apple would get hundreds of celebs from Kanye to Heidi Klum to create playlists.

4 **Top songs**

Where normal charts were compiled weekly, iTunes told you what songs were the top sellers every day.

numbers – and every iPod sold to a PC user was an opportunity to show just how green the grass was on the Apple side.

Fight for your digital rights

There was a problem with all those iPods, however. The music industry wasn't getting paid for the music people were listening to. The music business saw people putting 1,000 songs into their pockets, but they weren't paying for those songs. At best they were ripping them from CDs; at worst, they were pirating them from file sharing and illegal download sites. Having helped create the problem, Apple decided to offer a solution: the iTunes Music Store.

The iTunes Music Store launched in the US first, in April 2003, with 200,000 songs. It was a really simple proposition: buy any song in the catalogue for 99 cents and own it forever. "They invented the digital music business," says Michael Nash, the former boss of Warner Music Group's digital arm. iTunes wasn't the first music store, but it was arguably the first to get it right. Apple was now involved in everything from helping you discover music to helping you listen to it, all on Apple devices. By early 2003, Apple said it had sold nearly three quarters of a million iPods.

Apple's fixed 99¢ price was greeted with horror by record labels who thought $3 per track was a better price, and Apple found it hard to get labels to sign even one-year deals. It didn't have problems getting them to sign after the first year, though. iTunes sold a million songs in its first week. Before long, if you weren't on iTunes you weren't selling much digital music. If you were on iTunes, you were helping to sell iPods. iTunes Music Store files used digital rights management technology (DRM) to lock your purchases to you, and that DRM didn't work on other music players: if you bought it from iTunes, you had to play it on your Mac or your iPhone. Apple didn't drop DRM until 2007. In 2006, Apple sold its billionth iTunes song and its 100 millionth iPod.

The weird world of iPod mods

Let's pretend we never saw the U2 iPod or the iPod+HP, which replaced the Apple logo with HP's one for no good reason. Instead let's celebrate the crazy ones like Guy Dupont, who put a Raspberry Pi computer in an iPod Classic so it'd work with Spotify, and Stuart Hughes, whose gold-bodied iPod touch SUPREME is a bargain at just £139,995. Our favourite mod enabled you to play legendary shooter DOOM on an iPod Classic, and you can find out how to do it on instructables.com

2007
iPod nano (3rd gen)
4/8GB, bigger screen and smaller click wheel in oddly shaped design

2008
iPod nano (4th gen)
Back to normal. 4/8/16GB with accelerometer for 'shake to shuffle'. USB only

2008
iPod classic (2nd gen)
120GB only.

2008
iPod touch (2nd gen)
8/16/32GB, Bluetooth (but not enabled until iOS 3)

2008
iPod shuffle (2nd gen, again)
An additional four colour options but otherwise identical

2009
iPod shuffle (3rd gen)
2/4GB, USB, even smaller with controls moved to the earbud cable.

iPod, iPhone and the birth of Apple Music

How the iPod become the Everything Phone

Money for old iPods

Sealed, limited edition iPods command seriously big sums from collectors – a sealed Billie Holiday model from 2002 is currently £5,795 on eBay – but even at the lower end of the market you can get a good price for as-new iPods. The 7th-generation iPod classic is particularly popular.

Back in 2007, Steve Jobs took to the stage to announce "three revolutionary products... an iPod, a phone and an internet device". But these were not three discrete products. They were one device: the iPhone. "The iPod changed everything in 2001," Jobs said. "And we're going to do it again with the iPhone in 2007."

The iPhone was the second iTunes phone: the first, Motorola's ROKR, was launched in 2005 with a palpable lack of enthusiasm by Jobs. Maybe it was the lack of storage space – where an iPod could store 1,000 songs, the ROKR only had room for 100 – or the slow USB connection and lack of wireless data transfer. The ROKR was in actual fact a 'disastr'.

But the iPhone wasn't. Although compared to today's iPhones it was laughably primitive (and at the launch, incomplete: Steve Jobs' presentation was squeaky-bum time for Apple engineers who knew that the prototype was far from finished). It didn't run third-party apps, it only had a slow Edge data connection and it lacked basic features such as copy and paste. But none of that mattered: as it did with the iPod, Apple had learnt from other phone makers' mistakes and made something that just worked.

Apple sold 51 million iPods in 2007 and 1.39 million iPhones, but iPod sales started to decline in 2009 as the iPhone got more capable and more popular. iPod sales dropped from 54 million in 2009 to just 14 million in 2014; meanwhile iPhone sales went from 20 million to an icredible 169 million in the same period. By 2015, Apple was selling over 200 million iPhones a year and was no longer reporting iPod sales as a separate category.

The iPod did music well. The iPhone did everything well, and its launch signalled the end of the iPod heyday.

Reach out and touch me

The problem was simple: the iPod did one thing, music, brilliantly. But when the App Store was added in 2008, the iPhone was increasingly able to do everything brilliantly. Music was just another app.

Talking 'bout my generation

2009 iPod nano (5th gen)
8/16GB, bigger screen, video camera, FM radio and pedometer

2009 iPod touch (3rd gen)
32/64GB, USB, essentially an iPhone 3GS.

2010 iPod shuffle (4th gen)
Really just a control wheel with VoiceOver; 2GB, USB

2010 iPod nano (6th gen)
A square touch screen but no video any more. 8/16GB, USB

2010 iPod touch (4th gen)
8/16/32/64GB, USB, twin FaceTime cameras and Retina display.

Apple didn't give up on the iPod though: it launched the iPod touch in 2007, effectively stripping the phone bit out of the iPhone to make a more affordable do-everything device. But as iPhone sales soared and the iPad joined the Apple family, it's fair to say that the iPod was very low down Apple's list of priority projects. The last of the click-wheel iPods, the iPod classic, wasn't updated after 2007 and was discontinued in 2014; the iPod touch went from an annual update cycle between 2007 and 2010 to a biannual one, and when the fifth-generation iPod touch was launched in 2015, Apple didn't refresh it for another four years.

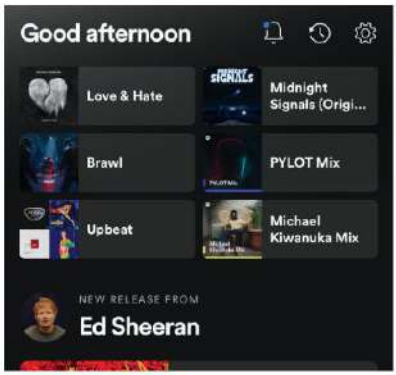
It wasn't just the iPhone. Music was changing too. In 2008, a new service launched in the US that did things very differently to Apple. That service was called Spotify.

Perfect piracy storm

Despite its billions of sales, the Apple Music Store didn't kill music piracy. Spotify and YouTube did. A perfect storm of technologies – faster internet and mobile internet connections, iPhones and iPads, better audio formats – meant that you could listen legally to pretty much anything ever recorded for free if you didn't mind the odd advert, or a low monthly fee if you did. By 2011 Spotify had one million paying subscribers; today it has 165 million, with another 200 million on the ad-funded version.

As great as music streaming is, some of us still want to hold our music – there's a big trade in iPod classics on eBay – and many people are embracing older audio formats such as vinyl and cassettes. They're often doing that to complement streaming, so for example in mid-2021 Billie Eilish made a mint green cassette version of her new album specifically for her Spotify fans; you can buy it for £4.99.

iPod sales started to decline as the iPhone got more capable and more popular



And now we're firmly in the era of huge numbers of people streaming their music, hence services like Apple Music.

Vinyl is so popular that pressing plants have huge backlogs: more than one million vinyl records were sold in the UK in the first three months of 2021, and in the US sales of vinyl now outstrip those of CDs. But those numbers pale in comparison to the numbers of people streaming their music, which is why Apple Music exists. Apple bought Beats Music, turned it into Apple Music and launched it in 2015; it had 11 million subscribers in its first year and an estimated 72 million by the end of 2020.

Apple didn't invent digital music, the MP3 player, the download store, the smartphone or music streaming. And it probably won't invent whatever music technology is in the future. But 20 years after the original iPod, we're can't wait to hear what Apple does next.

After iPod

The iPod might be practically dead, but audiophiles and music fans still love a good standalone music player, preferably one playing Hi-Res Audio (which the current iPod touch also supports). That delivers truly extraordinary sound quality, with devices such as Cowon's Plenue D3 also offering iPod-esque convenience with their own distinctive style.

We're big fans of Astell & Kern's Kann hi-res audio players, which look and feel amazing and deliver something close to a religious experience, and of Sony's Network Walkmans, which are at the more affordable end of the market.

2012
iPod nano (7th gen)
Back to rectangular. 16GB, USB, 2.5in touch screen. Video returns.

2012
iPod touch (5th gen)
16/32/64GB, A5 processor, Siri, bigger Retina display, Lightning; no iSight camera

2012
iPod touch (5th gen)
16/32/64GB, A5 processor, Siri, bigger Retina display, Lightning; no iSight camera

2014
iPod touch (5th gen)
16GB, iSight camera added along with more colour choices

2015
iPod touch (6th gen)
16/32/64/128GB, Lightning, A8 chip with M8 motion coprocessor

2019
iPod touch (7th gen)
32/128/256GB. Lightning, A10 Fusion, AR and Group FaceTime

Image credit: Spotify AB, Cowon

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Beginner's Guides

Introducing Mail

How to send and receive comms in Apple Mail

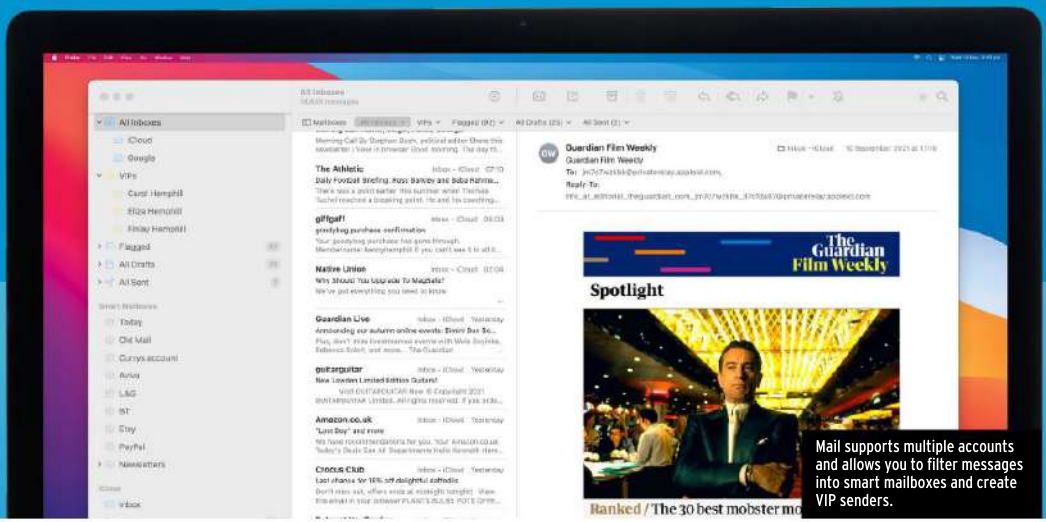
Apple's Mail is a great tool for personal email. Here's how to get started with it and get the most from it

WRITTEN BY **KENNY HEMPHILL**

Apple's Mail app is often overlooked in favour of alternative email clients that appear to offer more in the way of features. However, it's a very capable and easy-to-use tool and offers many advantages, particularly if you have multiple Apple devices and synchronise them using iCloud. What's more, it's had a couple of decent upgrades in recent versions of macOS, many of them focused on privacy. Sign in with Apple enables you to sign up to an email newsletter or enter a competition using a random email address that is forwarded to your iCloud email account. That prevents the sender from knowing your real address. And in Monterey, you can generate a random email address using Hide My Email.

Mail can also prevent senders finding out whether you have opened an email, if you select the option to block all remote content from loading. In Monterey, this is improved so that content is routed via a relay and you can load images while still preventing the sender from tracking whether you opened the message.

Mail supports more than just iCloud email and makes it very easy to add accounts from Google, Microsoft and others. You can, though, use any POP3 or IMAP email account.



Mail supports multiple accounts and allows you to filter messages into smart mailboxes and create VIP senders.

Get Mail working your way

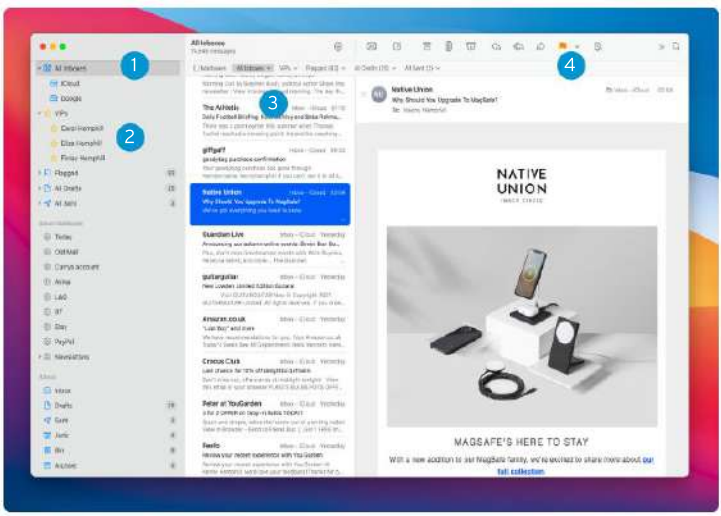
Set up accounts and start sending messages

One of the best things about Mail is that it can be as simple or as complicated as you want. If you use it with just one iCloud account and don't send or receive a lot of email, you can leave preferences set at their defaults and just have a two-pane interface with the list of messages in your inbox in one, and the current message in the other. If you enable Show Favourites bar, you'll be able to switch between your inbox, sent mail, drafts, flagged messages and VIPs easily, even without the mailbox list displayed.

If, on the other hand you have multiple accounts and like to file messages in folders rather then keep them in your inbox, you can keep the mailboxes list on-screen and use Smart Folders to automatically file messages that meet rules you set. Or you can create rules and apply them to your messages manually.

When it comes to composing emails, as well as adding attachments from the Finder, you can add photos from your Photos library and use Continuity Camera to grab images with your iPhone and add them directly to a message.

EXPLAINED... Mail's interface



1 Multi accounts

You can add multiple accounts from different providers and view those messages in a unified inbox.

2 VIP senders

If you specify a sender as a VIP, you can then set rules to treat messages from those senders differently.

3 Sneak preview

The message list previews up to five lines of an email. You can specify the number of lines in Preferences.

4 On mute

Mail allows you to mute replies to conversations so you don't get a notification when new ones arrive.

HOW TO Get started with Mail

1 Add an internet account

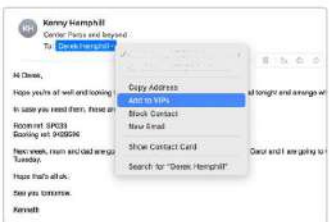
Launch Mail. Click the Mail menu and choose Accounts. You'll be taken to System Preferences > Internet Accounts. Click on the type of account – Exchange, Google, etc – you want to add. Fill in the details as requested.

2 Add IMAP or POP3

Click the Mail menu, then Preferences and choose Accounts. Click the '+'. Choose Other Mail Account then Continue. Enter your name, email address and password. Click Sign in. Enter details of your email host's servers.

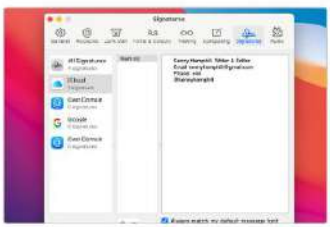
3 View the mailbox list

Click the View menu and choose Show Mailboxes. Alternatively, press ⌘+⇧+M. In full-screen mode, you can also place the pointer at the left of the screen and drag with two fingers on a touchpad or Magic Mouse.



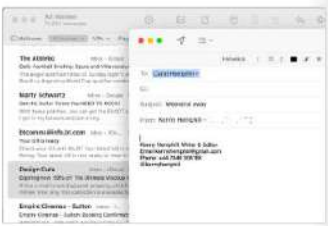
4 Add a VIP

VIPs appear under the VIP section in the mailboxes list and you can set rules for messages from them. Locate an email from someone you want to add as a VIP, click and hold on their name in the message header and choose Add to VIPs.



5 Create a signature

Go to Mail > Prefs > Signatures. Select the account for which you want to use the signature. Press '+' then type your text in. You can add multiple signatures. To choose how they are added, use the 'Choose signature' menu.

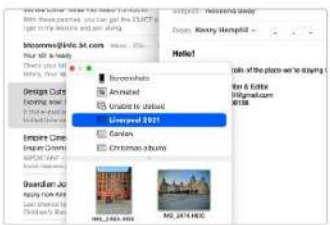


6 Start an email

Click the Compose button in the toolbar (it looks like a sheet of paper with a pen across it) or press ⌘+N. Start typing the name of the recipient and choose their name from the list that appears. Type a subject line.

7 Compose the text

Write or paste the text in the main body of the email. To format it, click 'Aa' in the toolbar and choose from the options. To add an attachment, click the paperclip and navigate to the file you want to attach. Click Choose File.

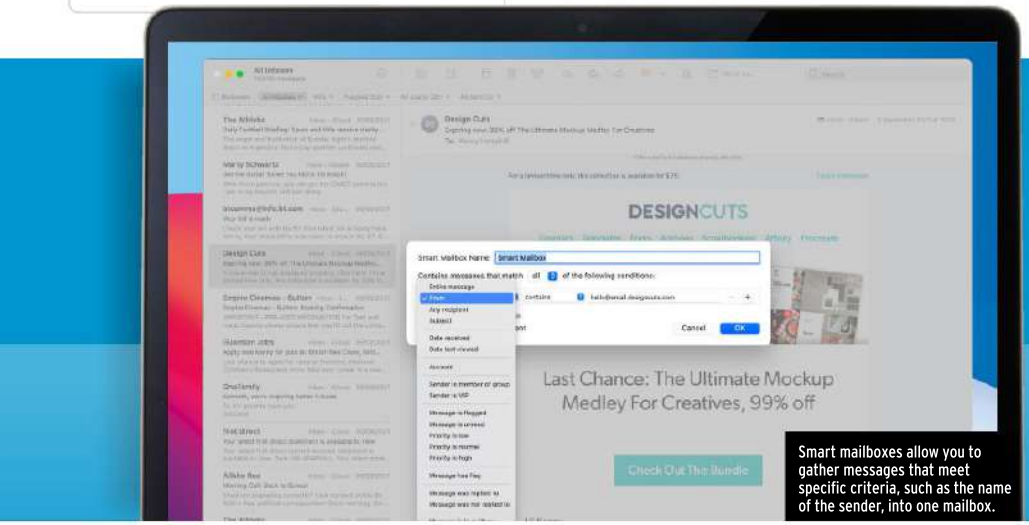


8 Add a photo

Click the down arrow next to the Photos button at the right of the toolbar. Choose Photos In the browser window that opens, navigate to the photo you want, then drag it into the message. Choose a size from 'Image size.'

9 Finish and send

You can mark up an image by hovering over its top-right corner and choosing Markup. Use the tools in the window that opens to mark up the image then click Done. Click the paper aeroplane to send the email.



Smart mailboxes allow you to gather messages that meet specific criteria, such as the name of the sender, into one mailbox.

Keep on top of your inbox

Use rules and smart mailboxes to organise incoming messages

Find that you rarely delete incoming mail and almost never file it in a folder? It's a common issue. The result is thousands of messages sitting in your inbox. Perhaps many of them are even unread. While modern Macs and fast broadband mean that huge inboxes aren't the problem they once were, it's still good practice to organise incoming mail. Apple makes it easy with smart mailboxes, and rules, which perform actions on messages. Spend some time setting these up and your inbox will be much less cluttered.

Mail also has an unsubscribe feature that seeks to identify newsletter emails and offer you the option to unsubscribe at the press of a button. We've found it to be a bit hit and miss, but it's useful on the occasions it successfully identifies a newsletter you don't read.

The final tool for managing incoming mail is the Junk filter. As with any email client, the more messages you mark as junk, the more Mail will learn and adept it will become at identifying spam.

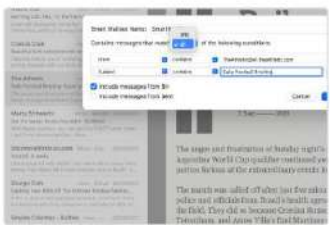
HOW TO Create a smart mailbox

1 Name the smart mailbox

Smart mailboxes don't move messages, they just filter them into a box to make them easier to find. Click the Mailbox menu and choose New Smart Mailbox. Type a name for the box that reflects what it will be used for.

2 Set the criteria

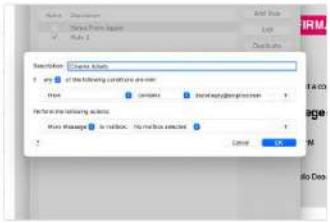
Messages are filtered according to one or more criteria you set. Choose an option from the first to drop-down menus, and if necessary, add text to the text box on the right. To add more criteria, click the '+' on the far right.



3 Save smart mailbox

Once you've added all the criteria, select whether they all have to be met or if just any of them. Choose whether to include messages in Sent or in the Bin, and click OK. It will appear under Smart Mailboxes in the Mailbox List.

HOW TO Set up rules



1 Add a rule

Rules are created in Preferences. Click the Mail menu, then Preferences and choose the Rules tab. Click the Add Rule button. Type a descriptive name for the rule and choose whether any or all conditions have to be met.

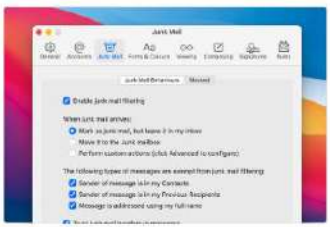
2 Set the conditions

Rules work similarly to Smart Mailboxes. So, choose the criteria for the first condition from the two menus on the left and add text if it's need to create the condition. Click the '+' to add more conditions to the rule.

3 Specify the action

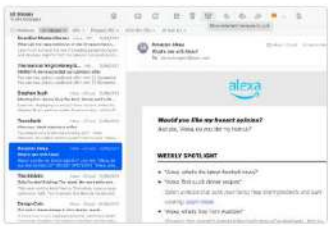
We need to tell Mail what to do with messages that meet these conditions. Select actions from the menus and type text any boxes that appear. When you're finished, click Done and choose whether to apply the rule to existing messages.

HOW TO Use unsubscribe and junk



1 Set up junk filtering

Go to Mail > Preferences > Junk Mail. Check 'Enable junk mail filtering'. Choose other options as required. Go to the Accounts tab. For each account, specify where junk mail should go and how quickly it should be deleted.

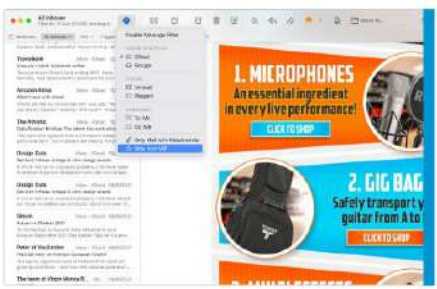


2 Mark messages as junk

If you see any spam mail in your inbox, click it, then click the junk mail button – a wastebasket with an 'X' in it. Alternatively, ctrl-click the message and choose 'Move to' then Junk. Or press ⌘+⇧+J.

3 Unsubscribe from a list

If Mail has identified a message as coming from a mailing list, it will display a message above the body of the email. To the right of the message, you'll see the word Unsubscribe. Click on it to unsubscribe from the list.



Filter messages in your inbox

Only see those that meet specific criteria

Mail provides a couple of options for filtering messages in your Inbox. The first is the Filter Messages button that sits in the toolbar above the message preview list. Click it to switch filtering on. To choose a filter, click and hold the button and select an option from the menu. The other method is to enable the Favourites Bar from the View menu. You will then see a row of options like VIPs and Flagged. Click and hold on one to select an option. To view only messages that satisfy the filter criteria, click the headings – VIP, Flagged, etc – once.

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★☆☆☆☆
A waste of your money

78 **iPhone 13 Pro**

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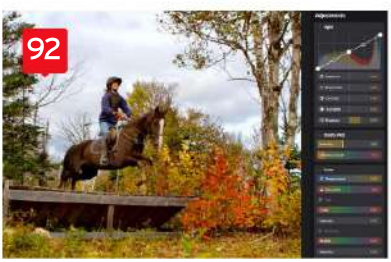
96 **6 apps** to help you study for success



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iPhone 13 Pro

The best just got better – with longer battery life, better cameras and a smoother display

› From £949 › **FROM** Apple, apple.com/uk
› **FEATURES** 6.1-inch Super Retina XDR display (2532x1170 pixels), A15 Bionic chip, 128/256/512GB/1TB of storage, Wi-Fi 6, Bluetooth 5.0, 5G mobile connectivity, Lightning port, MagSafe charging, 12MP main camera with Ultra Wide, Wide and Telephoto lenses

The camera 'bump' on the back of the iPhone 13 Pro is now so deep that the phone no longer lays flat when placed flat on its back.

After last year's phenomenal iPhone redesign (step forward iPhone 12), it would be churlish to expect too much from its successor, especially given what the world has been through since October 2020. But here we are, and here it is – Apple's incredible smartphone flagship, the iPhone 13 Pro.

Where the iPhone 12 was a radical overhaul of what went before, with a new flat-sided design, new materials (including Ceramic Shield) and a new camera system, the iPhone 13 feels much more incremental – it's the 'tock' to the iPhone 12's 'tick' in Apple's iPhone tick/tock development cycle. In times gone by it would simply have been named the iPhone 12s, and yet and yet...

The iPhone 13, particularly in Pro guise, feels noticeably different to what went before. On the outside, the Pro now comes in four new colours – Gold, Graphite, Silver and Sierra Blue and it's also thicker and heavier than its predecessor – while it has the same 71.5x146.7mm dimensions as the iPhone 12, it's now 0.25mm thicker at 7.65mm and weighs 16g more at 203g, largely because it now sports a bigger battery giving it an estimated run time of 22 hours for video playback, compared to 17 hours in the iPhone 12 Pro. That's a big jump. Also bigger – much bigger – is the camera bump on the back. That's because the iPhone 13 Pro's camera system includes an improved 1.9 µm image sensor on the Wide camera which, along with its f/1.5 aperture, allows the iPhone 13 Pro to take in 2.2 times more light than its before, improving its low-light capabilities.

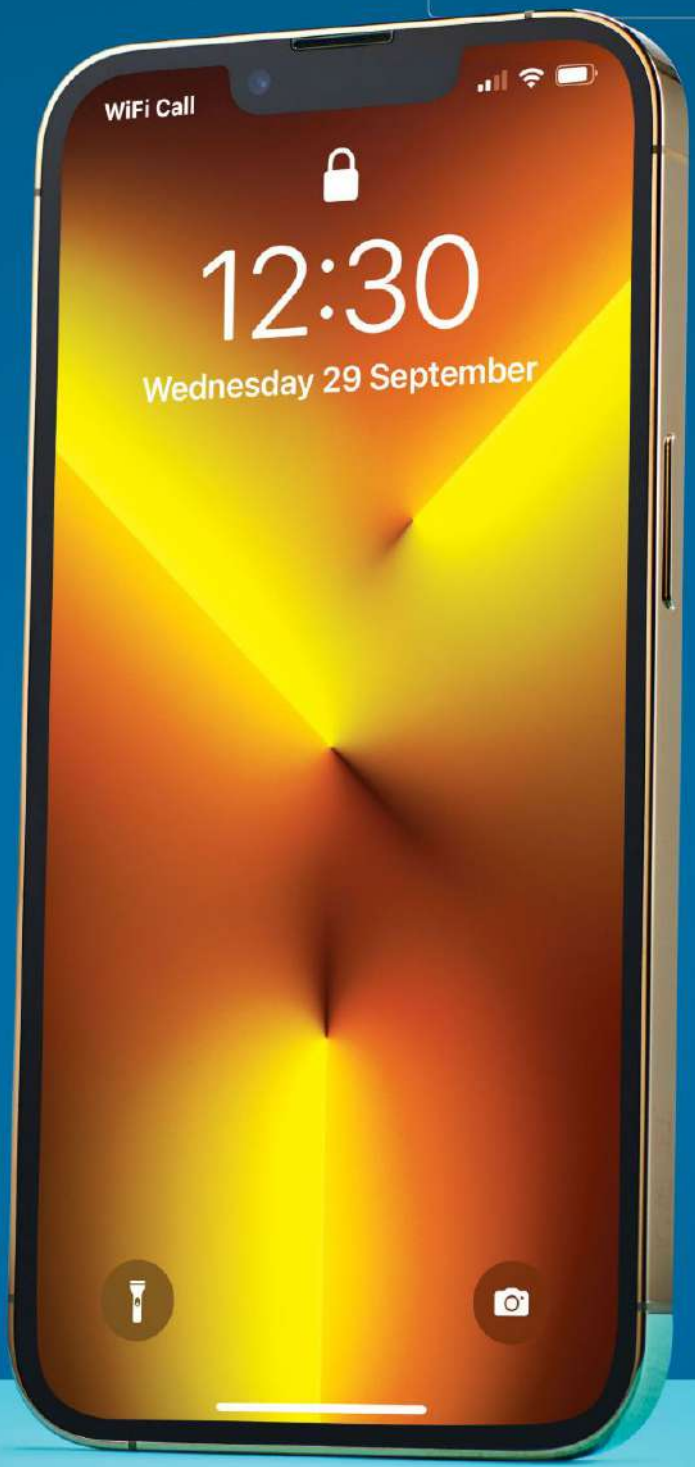
Other improvements include a Telephoto lens with 3x optical zoom (up from 2.5x) and an Ultra Wide lens with a 120° field of view. Also new this year is a Macro mode that automatically switches the camera to the Ultra Wide lens for super close-ups, plus Cinematic – a tricksy video camera effect, which switches focus between subjects in people scenes, depending on whether they're looking at the camera or not. It's fun to play with, but not as 'pro' as Apple's publicity would suggest. For one thing, it only works when shooting 1080p video not 4K Ultra HD.

Elsewhere, the iPhone 13 Pro has been given some healthy upgrades too. It now sports Apple's new A15 Bionic chip, a 5nm SoC which includes a 6-core CPU, a 5-core GPU and 16-core Neural Engine, which handles everything from machine learning to computational photography.

A larger image sensor and f/1.5 aperture on the Wide lens means that the iPhone 13 Pro is much better at shooting in low light – shots that would previously have triggered Night mode no longer do so.

Go ProMotion

The piéce de résistance for some tech fans, though, is the Super Retina XDR display with ProMotion, which brings 120Hz screen refresh rates to the iPhone for the first time. Already available on iPad Pro, 120Hz ProMotion delivers improved graphics and touchscreen performance, although Apple is somewhat late to the party – 120Hz refresh rates have been a feature of some rivals since the Razer Phone made its debut in 2017.



The 6.1in OLED display is 25% brighter than the iPhone 12 Pro's and can reach 1,000 nits of brightness. The difference is noticeable – and we like it!

Jo says...

› As a big fan of the iPhone 12 Pro, the changes Apple has made here feel very welcome. But the biggest game changer for me is the longer battery life. I can now easily get through a day without having to recharge or carry a backup battery in my bag. Brilliant!

Mac FORMAT ★★★★★ EDITOR'S CHOICE

Mac FORMAT

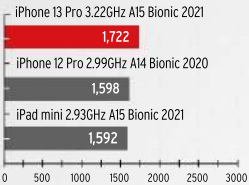
VERDICT

› It's not a radical departure from its predecessor, but iPhone 13 Pro is still the best iPhone yet.

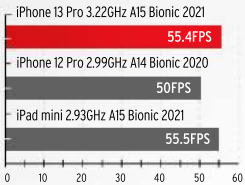
★★★★★

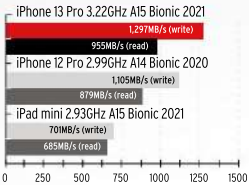
- ⊕ Brighter display
- ⊕ Longer battery life
- ⊕ Improved low-light image captures
- ⊖ Cinematic mode feels gimmicky

BENCHMARKS Our analysis explained ›



Index score (higher is better)


iPhone 13 Pro 3.22GHz A15 Bionic 2021
55.4FPS
iPhone 12 Pro 2.99GHz A14 Bionic 2020
50FPS
iPad mini 2.93GHz A15 Bionic 2021
55.5FPS
0 10 20 30 40 50 60
Frames per second (higher is better)



Storage read/write speed (higher is better)

GEEKBENCH 5 SINGLE-CORE TEST

› We use this cross-platform benchmarking tool to measure a device's performance, with a single-core processor baseline of 1,000.

3DMARK WILD LIFE

› This cross-platform benchmarking app measures a device's graphics performance, running a one-minute test at 2560x1440 resolution. Higher frame rates are better.

PERFORMANCETEST MOBILE (PASSMARK)

› Another cross-platform benchmarking tool for mobile devices. Here we're measuring storage read/write speeds.

While 120Hz refresh rates can result in lower battery life, ProMotion on the iPhone 13 Pro adapts its refresh rate to suit what you're doing, running as low as 10Hz when viewing a page of text, for example, and ramping up to 120Hz when fast scrolling or playing games. Pleasingly for film fans, it even adusts the refresh rate when viewing 24p movies – just like the director intended. However, ProMotion is not completely flaw free, leading Apple to issue guidance in September due to animation issues in some apps and games – no doubt developers will catch up.

More noticeable is the iPhone 13 Pro's brighter 6.1-inch OLED display. Apple says its 25% brighter than the one in the iPhone 12 and is capable of up to 1,000 nits of peak brightness, making it easier to see in strong sunlight. That's certainly borne out in our testing – this year's Retina display is brighter, whiter and offers better contrast than the already phenomenal displays in the iPhone 12 Pro. In addition, Apple has also managed to shrink the TrueDepth/Face ID 'notch' on the front of the display, making it 20% smaller than before, making watching movies on-screen a much more enjoyable experience.

The iPhone 13 Pro is available in four classy colours and now offers up to 1TB of storage at the top end.

Finally, the iPhone 13 Pro now has more onboard storage, although if you're going to go Pro we'd avoid the £949 version of the phone, which only has 128GB to play with – a little too little if you plan on shooting a lot of 4K video. Other options are 256GB (£1,049), 512GB (£1,249) and 1TB (£1,449).

Bigger, better, faster, more?

Having lived with the iPhone 13 Pro for a while, we definitely prefer it to the iPhone 12 Pro – while some of the changes feel superfluous (120Hz refresh, Cinematic mode), some of the others absolutely aren't. Being able to shoot macro photos is great (although Apple says its going to offer a manual override to stop the camera 'hunting' for the correct focus), and shooting in low light is much improved – our late night photo shoot resulted in the camera's Night mode kicking in far less often when photographing dusky city streets. The improved battery life is also welcome – finally, there's an iPhone that can get through a whole day of activity without reaching for a charger or resorting to Low Power Mode.

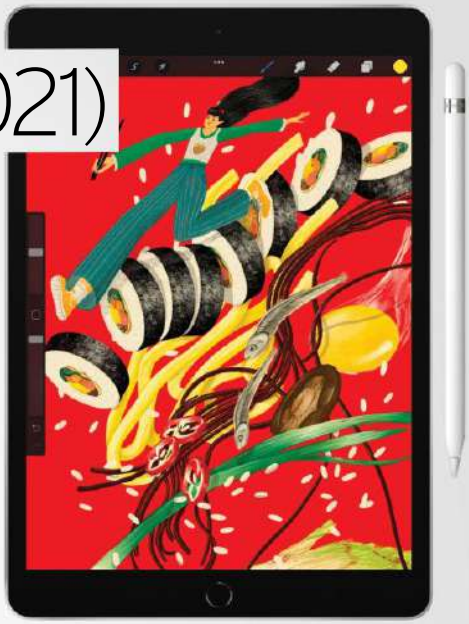
If you already own an iPhone 12 Pro, the changes here probably aren't enough to tempt you to upgrade just yet. But if you own an iPhone 11 or older, the iPhone 13 Pro is a must-have. **Rob Mead-Green**

iPad 10.2-inch (2021)

Apple's most affordable iPad gets an incremental update

› **From £319** › **FROM** Apple, apple.com/uk
› **NEEDS** 10.2-inch Retina display (2160x1620 pixels), A13 Bionic chip, 64/256GB, 802.11ac Wi-Fi, Bluetooth 4.2, Lightning port

The ninth-gen device now sports Apple's A13 Bionic chip



With a faster A13 Bionic chip and twice as much storage than before, the entry-level iPad now represents even better value.

While it's not been given the radical makeover afforded the iPad mini (p82) and last year's iPad Air (*MF359*), Apple's most affordable iPad still represents incredible value. That's because this ninth-generation device now sports Apple's A13 Bionic chip, instead of last year's A12 version, plus it now comes with twice as much storage, with the £319 entry-level model packing 64GB of storage compared to last year's 32GB, and the step-up £459 model getting 256GB. Wi-Fi+Cellular models are also available at £439 (64GB) and £579 (256GB).

Like the iPad Pro and the iPad mini, the entry-level iPad also benefits from Centre Stage, which enables the 12MP FaceTime HD camera to follow you around the room (perfect for video calls) as well as support for Apple's £159 Smart Keyboard and the first-gen Apple Pencil (£89), along with the multitasking improvements included in iPadOS 15. It also gets a True Tone display for the first time.

Otherwise, this year's iPad is pretty much the same as the last with a 10.2-inch Retina display and larger-than-average bezels compared to the rest of Apple's iPad line-up. It also retains a Home button on the front with Touch ID when the iPad mini and iPad Air have moved Touch ID to the Power button and the iPad Pro packs Face ID.

With iPadOS 15 onboard, the entry-level iPad is ideal for multi-person FaceTime calls and much more besides.

Great go-to

All of this is to be expected. As Apple's most affordable iPad, it's no surprise that it retains the classic elements that made the original so great. And this year's incremental improvements are just enough to keep things interesting, with the 2.66GHz A13 Bionic scoring 1,325 in Geekbench 5 (compared to the iPad Air's 1,590 and iPad mini's 1,592), 41fps in our 3DMark Wild Life benchmarks and 500MB/s (write) and 462MB/s (read) in Passmark's PerformanceTest storage test – this compares to scores of 1,117 (Geekbench 5), 34fps (3DMark Wild Life) and 586MB/s (write) and 575MB/s (read) in the Passmark PerformanceTest hit by the 2020 edition.

Has Apple done enough? On balance, yes. While the iPad Pro, iPad Air and iPad mini have set new benchmarks in design, features and desirability, the 10.2-inch iPad remains an affordable and accomplished workhorse. While we have no doubt that future versions will eventually see the features of its more illustrious siblings trickle down, for now the iPad remains a great go-to device for anyone needing a cheap iPadOS tablet.

Rob Mead-Green

Mac FORMAT VERDICT

› Apple's done just enough to keep its entry-level iPad relevant.

★★★★☆

⊕ Apple's most affordable iPad
⊕ Faster and with more storage than before
⊖ Dated design
⊖ Ultra-wide bezels

iPad mini (2021)

Apple's littlest iPad finally gets the update it deserves

› From £479 › **FROM** Apple, apple.com/uk
› **FEATURES** 8.3-inch Liquid Retina display (2266x1488 pixels), A15 Bionic chip, 64/256GB of storage, Wi-Fi 6, Bluetooth 5.0, USB-C

Complete the look with a Smart Folio case in Black, White, English Lavender, Dark Cherry and Electric Orange.

With its larger 8.3in Liquid Retina display, the iPad mini now feels like an iPad Air in miniature form.

The iPad mini has long felt like the Cinderella product in Apple's iPad line-up, introduced in 2012 and updated intermittently since, this year's upgrade is its first since 2019. But, boy, has Apple made up for lost time.

Like last year's iPad Air, the iPad mini looks like an iPad Pro that's been hit with a shrink ray – it's squared-off edges and narrower bezels giving it the family feel of its bigger siblings, leaving the iPad 10.2in (p81) as the only model now boasting the old, and increasingly dated, original iPad design.

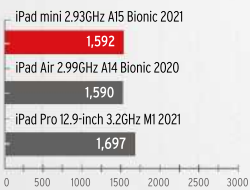
The changes are certainly welcome. The new iPad mini now sports an 8.3-inch Liquid Retina display (up from 7.9-inches) without radically increasing the 203.2x134.8x6.1mm size of the previous design (the new model measures 195.4x134.8x6.3mm), and that's because Apple has moved the Touch ID sensor from the front of the device to the Power button and made the bezels narrower, giving your apps more room to breathe.

The new iPad mini also now gets the A15 Bionic chip found in the iPhone 13 series, giving it 40% more processing power than the A12 chip in the previous generation. And the iPad mini now boasts Wi-Fi 6 and Bluetooth 5.0, a well as 5G connectivity on the Wi-Fi+Cellular models. Prices start at £479 for the 64GB Wi-Fi version with the 256GB version costing £619. Wi-Fi+Cellular prices start at £619 for the 64GB version and rise to £759 for a model with 256GB of storage. Whichever model you choose, you can also pick from four different colours: Space Grey, Pink, Purple and Starlight.

Paul says...

› One possible chink in the iPad mini's armory is 'jelly scroll' where the display appears to struggle when rapidly scrolling through text and other content in Portrait mode. We've not noticed this on our review sample, though, and Apple says it's normal behaviour for LCD displays.

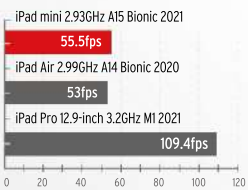
BENCHMARKS Our analysis explained ›



Index score (higher is better)

GEEKBENCH 5 SINGLE-CORE TEST

› We use this cross-platform benchmarking tool to measure a device's performance, with a single-core processor baseline of 1,000. Higher scores are better.



Frames per second (higher is better)

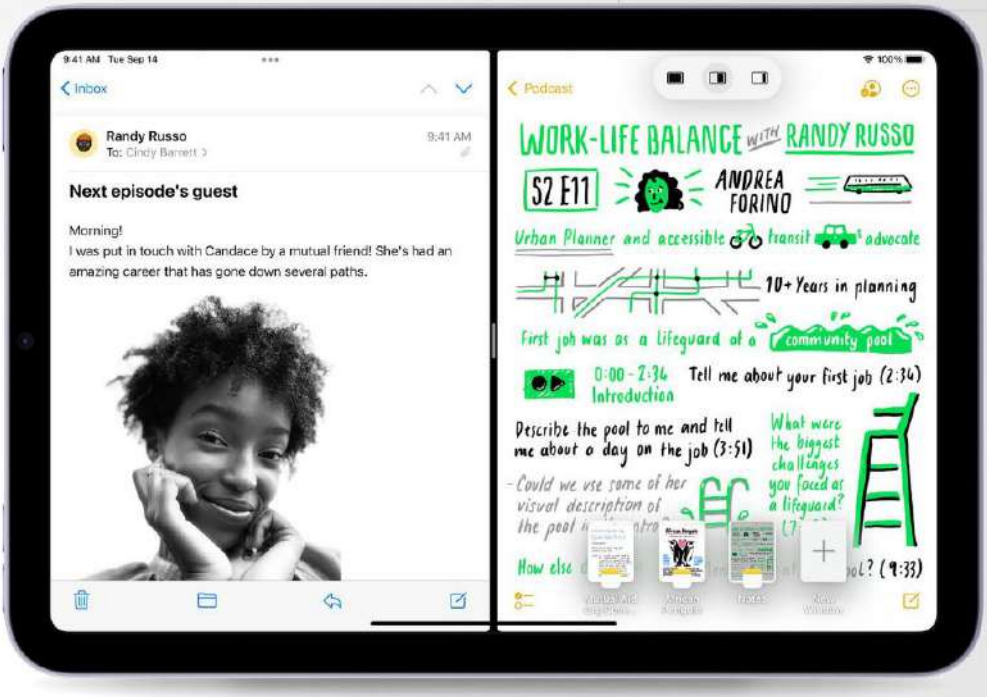
3DMARK WILD LIFE (2560X1440)

› This cross-platform benchmarking app measures a device's graphics performance, running a one-minute test at 2560x1440 resolution. Higher frame rates are better.

Storage read/write speed (higher is better)

PERFORMANCETEST MOBILE (PASSMARK)

› Another cross-platform benchmarking tool for mobile devices, this one provides individual scores. Here we're measuring storage read/write speeds.


9:41 AM Tue Sep 14
Inbox
Randy Russo
To: Cindy Barrett
9:41 AM
Next episode's guest
Morning!
I was put in touch with Candace by a mutual friend! She's had an amazing career that has gone down several paths.
Podcast
WORK-LIFE BALANCE WITH RANDY RUSSO
S2 E11
ANDREA FORINO
Urban Planner and accessible transit advocate
10+ Years in planning
First job was as a lifeguard at a community pool
0:00 - 2:34 Introduction
Tell me about your first job (2:34)
Describe the pool to me and tell me about a day on the job (3:51)
What were the biggest challenges you faced as a lifeguard?
Could we use some of her visual description of the pool
How else
(9:33)

Pleasingly, the iPad mini now also supports the second-gen Apple Pencil (£119) and comes with magnetic charging on one side. There's no Smart Connector for a Magic Keyboard though, so if you don't want to rely on the on-screen keyboard, you'll need to pair the iPad mini with an off-board Bluetooth keyboard instead.

And that's something you definitely might want to do – while the iPad mini's screen is gorgeous to look at, iPadOS 15 doesn't seem willing to accommodate its smaller size. Open a Pages or Numbers document in landscape, for example, and the on-screen keyboard takes up 70-80% of what you see; things work better in portrait mode, but then that won't really work if you're propping up your iPad using Apple's Smart Folio case (£59), the built-in stand for which only works in landscape mode. Maybe that's just as well.

Small wonder

While you can use iPadOS 15 niceties like Slide Over and Split View to hammer out emails and watch *Homes Under The Hammer* at the same time, the iPad mini really works best as a 'consumption' rather than a 'creation' device. Its small screen and pocketability make it ideal for holding one-handed so you can read an ebook while sipping a latte on the train. And its P3-ready wide colour display is great for watching movies or playing games on. The built-in stereo speakers even sound good too.

Similarly, the iPad mini looks like it should be able to go toe-to-toe in performance terms against the iPhone 13 (thanks to that A15 Bionic chip), but our benchmarks prove its power is more nuanced than that. The 256GB iPad mini on test scored 1,592 in our Geekbench 5 CPU test, almost exactly matching last year's iPad Air score (which has an A14 Bionic chip), and a little short of the iPhone 13 Pro's 1,772 result. The iPad mini's graphics performance is also on a par with the iPad Air, scoring 55.5fps in 3DMark's Wild Life test versus the Air's 53fps, while in Passmark's PerformanceTest it hit storage read/write scores of 701MB/s and 685MB/s respectively, making it slightly slower than the iPad Air. In every case, though, it fell well short of the scores achieved by the M1-powered iPad Pro – as you'd expect really.

That doesn't mean we think any less of the iPad mini though. It's beautiful to look at, beautifully made, and has more power than a tablet this tiny should have in 2021. Did someone say "pocket rocket"? The iPad mini is all that – and then some.

Rob Mead-Green

Multitasking is easier than ever in iPadOS 15, even if the iPad mini's 8.3-inch screen slightly works against it.

Mac FORMAT VERDICT

› Small, smart and powerful, the iPad mini is a tiny delight.

★★★★☆

- ⊕ All-new design
- ⊕ A15 Bionic chip
- ⊕ Small, powerful
- ⊖ iPadOS limitations

The compact Elfin is light enough to take to a friend's home for movie nights.

XGIMI Elfin

A little projector that produces a big image

› **£649** › **FROM** XGIMI, uk.xgimi.com › **FEATURES** 1080p Full HD resolution, 800 ANSI lumens brightness, dual-band 802.11ac Wi-Fi, Bluetooth 5.0, 1x HDMI 2.0 port, 1x 3.5mm audio output, 50x192x192mm, 0.9kg

The Elfin can automatically adjust the focus, size and angle of the image

We were impressed by the high-quality 4K image of XGIMI's Horizon Pro projector (see *MF370*), although its £1,699 price tag put it way out of reach for most people. However, the company recently launched the new Elfin projector, which provides a more affordable 1080p Full HD option, along with a compact and semi-portable design for £649.

The Elfin lives up to its name, standing just 5cm high, and 19.2cm wide and deep. In fact, it looks very much like a white version of the Mac mini, and its 0.9kg weight means that you can easily slip it into a backpack and carry it around to a friend's place for suitably cinematic movie nights. There's no internal battery though, so you do still need mains power to use the projector.

Cinematic in this instance means an image size of up to 200 inches (5.08m) – measured diagonally – although you'll need to place the petite projector about 20ft (6m) from the screen to achieve that. Smaller rooms should be able to get an image of around 100 inches (2.54m) across at a distance of 2.5m, as we did during our own tests.

Getting started is really easy as the Elfin can automatically adjust the focus, size and angle of the image to suit the setup in your room. However, the use of Android TV for the projector's operating system won't suit everyone – especially as it asks you to log in with a privacy-pilfering Google account during setup.

The Elfin projector can display an image size of up to 200in from about 6m away, with a brightness of 800 lumens.

Support network

If you're not too traumatised by the thought of using Android, the Elfin does work pretty well. It only provides 1920x 1080 resolution, but the image is clear and colourful, and perfectly adequate for watching movies at home. Its 800 ANSI lumens brightness is relatively modest – it's not bright enough to view in daylight so you'll have to wait until the sun goes down.

The Elfin supports both Bluetooth 5.0 and dual-band 802.11ac Wi-Fi, which gives you access to a wide range of Android apps from the Google Play store. There is a somewhat misleading reference to AirPlay in some of XGIMI's technical documentation, but the projector doesn't actually have built-in support for AirPlay – as some of its rivals do – relying on Google's Chromecast for screen mirroring instead.

It does, however, have a standard HDMI 2.0 port on the back, and we had no trouble connecting an Apple TV 4K via HDMI, and an iPad using Apple's Digital AV Adapter, in order to watch some of our iTunes films. The Elfin has a small set of built-in speakers, but there's also a 3.5mm audio connector so that you can plug in a pair of headphones or external speakers.

If you're a 4K purist then the 1080p Elfin might not provide the image quality you need, but it's fine for watching streaming video and films at home, and its compact design will be useful if you want to take it around to a friend's place for a social movie night.

Cliff Joseph

Mac FORMAT VERDICT

› It could be a bit more Apple-friendly, but the Elfin is an affordable option.

★★★☆☆

- ⊕ Compact, lightweight design
- ⊕ Automatic set-up
- ⊖ Uses Android
- ⊖ No AirPlay for Apple devices

› Image credit: XGIMI Ltd

Twelve South Forté

MagSafe stand for iPhone 12 and iPhone 13

› **$39.99** (about **£30**) › **FROM** Twelve South, twelvesouth.com › **FEATURES** Works with MagSafe compatible iPhone 12 and iPhone 13 devices (MagSafe charger required), Portrait/Landscape modes, tilts up to 70°

A good-looking charger stand but we'd tweak the design a little.

Mac FORMAT VERDICT

› The Twelve South Forté is a neat idea – but its execution lets it down slightly.

★★★☆☆

⊕ Works with iPhone 12 and iPhone 13

⊖ Needs MagSafe Charger

Got an iPhone 12 or 13 or lolling around on your desk or bedside table? Then the Twelve South Forté could be what you need. Comprising a metal base plate with a plastic arm into which you slot Apple's £39 MagSafe Charger, it acts as a stylish home for your iPhone, holding it in place in mid-air while charging it at the same time. Because it relies on MagSafe, you can position your iPhone in portrait or landscape mode, and the circular head of the arm – where the MagSafe charger goes – can be tilted through 70°. It's great for watching movies, surfing on Safari or listening to your favourite podcast while you're sat at your desk or lying in bed. And it's a lot more elegant than just letting your iPhone lie flat on its MagSafe Charger.

It's not perfect though. For one thing, the plastic arm slots fairly loosely into a hole in the metal base plate rather than being securely attached, meaning the arm can come away with your iPhone when you pick it up (there's a knack to it as you'll soon learn). The plastic arm also feels a little on the flimsy side compared to the base plate which feels suitably weighty.

The solution would be to have a metal arm that's more securely attached (screwed in) to the base plate, with a plastic head for MagSafe Charger at one end. **Rob Mead-Green**

OWC Envoy Pro SX SSD 1TB

Thunderbolt-only external drive

› **£345.99** › **FROM** Other World Computing, macsales.com › **FEATURES** 1TB solid-state drive, Thunderbolt 3 port (Thunderbolt 3 cable included); works with Thunderbolt/USB 4 Macs, Bus-powered; dust and water resistant to IP67

A crush, dust and waterproof SSD that's also incredibly quick.

Mac FORMAT VERDICT

› The Envoy Pro SX may be pricey, but it's also tough, reliable and very fast.

★★★★★

⊕ Tough, reliable and superfast

⊖ Pricy (but worth it)

Looking for some additional offboard storage for a space-constrained MacBook? If so, or if you need a pro-level drive for life on the road or something quick and reliable for Time Machine backups, OWC's Envoy Pro series does all that and how – we raved about the Envoy Pro FX in MF364, now here comes it's ever so slightly cheaper, black-clad cousin.

The superlatives that applied to that drive still apply here. You get a crush-proof, dust-proof, waterproof drive (IP67) that's as tough on the outside as it is speedy on the inside; our 5GB Blackmagic Disk Speed Test benchmarks peaking at 1,872.3MB/s (write) and 2,477MB/s (read), the latter of which is only a little way short of OWC's published figure of 2,847MB/s. The drive made light work of our 5GB Photos library, copying from iMac to drive in around 17 seconds, and back again in just under 10. OWC's own drive software includes a one-year subscription to Acronis True Image if you don't want to use Time Machine for backups.

The only reason not to buy this drive is its choice of connectivity – where the Envoy Pro FX works with Thunderbolt/USB4 and USB 3 Type-A (thanks to an inline USB-C to USB-A adapter), the Envoy Pro SX is limited to Thunderbolt/USB 4 – that explains the £20 difference in price, although you could always use the SX with an adaptor. Otherwise the drives work and perform identically. **Rob Mead-Green**

› **Image credit:** Twelve South LLC, Other World Computing Inc

Group test

Reviewed by **NICK PEERS**

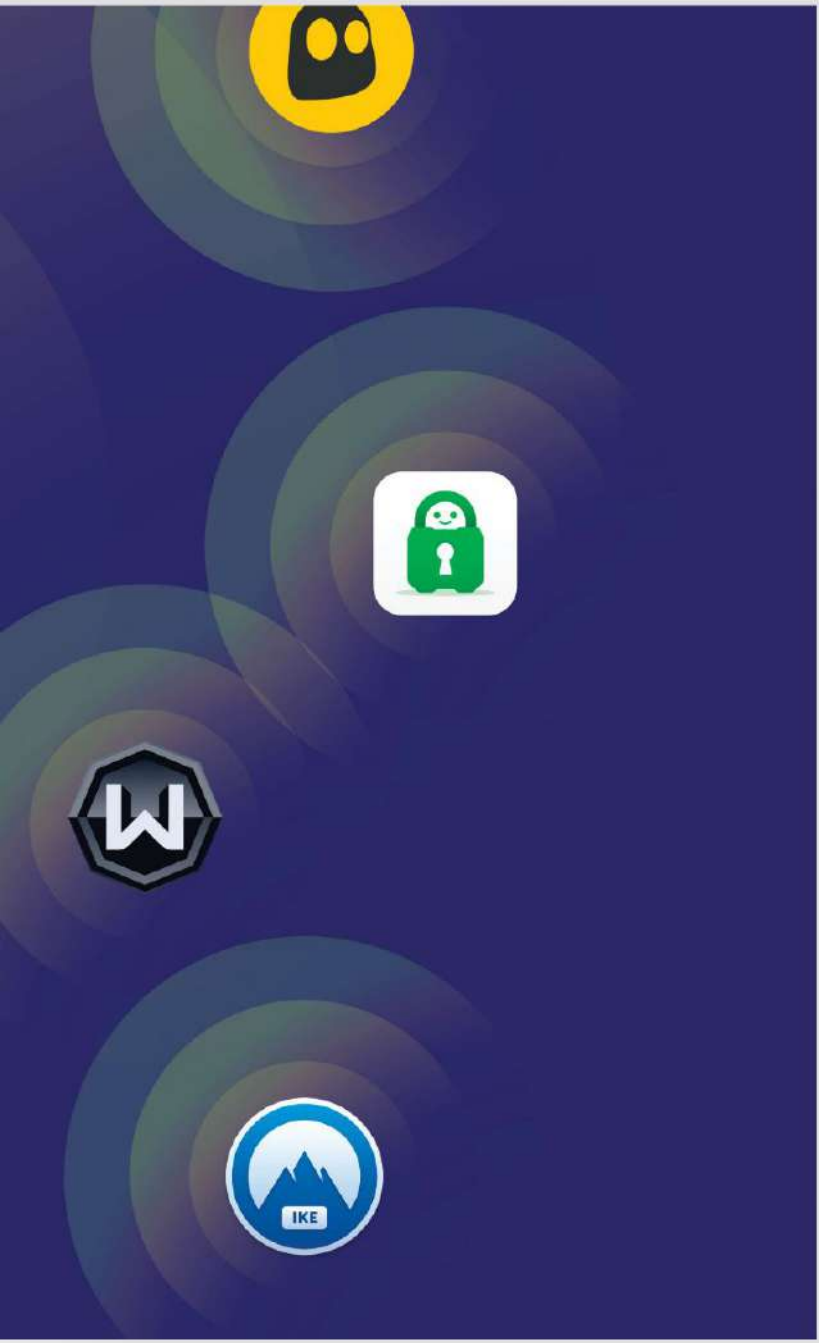
ON TEST...

- CyberGhost VPN
- ExpressVPN
- NordVPN
- Private Internet Access
- TunnelBear
- Windscribe

VPN PROVIDERS

Discover how to remain anonymous and private online

Image credits (top to bottom, left to right): ExpressVPN, TunnelBear LLC,



Virtual Private Networks (VPN) exist to make it harder, if not impossible, to identify both you and your location online. When switched on, a VPN encrypts all the data you send to the internet to hide your activity from your internet provider and your location from whichever website or web service you're using. It also protects you when surfing through Wi-Fi networks, protected or open.

Technically, only the VPN knows what you're doing, so it's important that it promises to keep no personally identifiable logs of your activities, either for its own benefit or if subpoenaed by a government agency.

In this round-up, we've taken six of the leading VPN providers and tested them for all the key things you need from a VPN: privacy, security, performance, and ease of use. The best part is that all six work on both Mac and iPhone to protect you both at home and on the move. Our tests provide a solid indication of the VPNs' performance. Read on to discover which VPN offers the best blend of all features to provide you with a vital layer of additional security and privacy when online.

How we tested

› We tested the VPNs' security by conducting a series of leak tests at ipleak.net and tenta.com/test. These determine if your connection or browser is 'leaking' personally identifiable information such as your actual IP address and location. All six providers passed with flying colours. We then tested the performance of each VPN in three locations (locally, on the other side of the Atlantic, and in Australia) using Speedtest (speedtest.net) to see what negative effect the VPN had on transfer speeds.

› Image credits (left to right,top to bottom): CyberGhost SRL, Private Internet Access Inc, Windscribe Limited, NordVPN.com

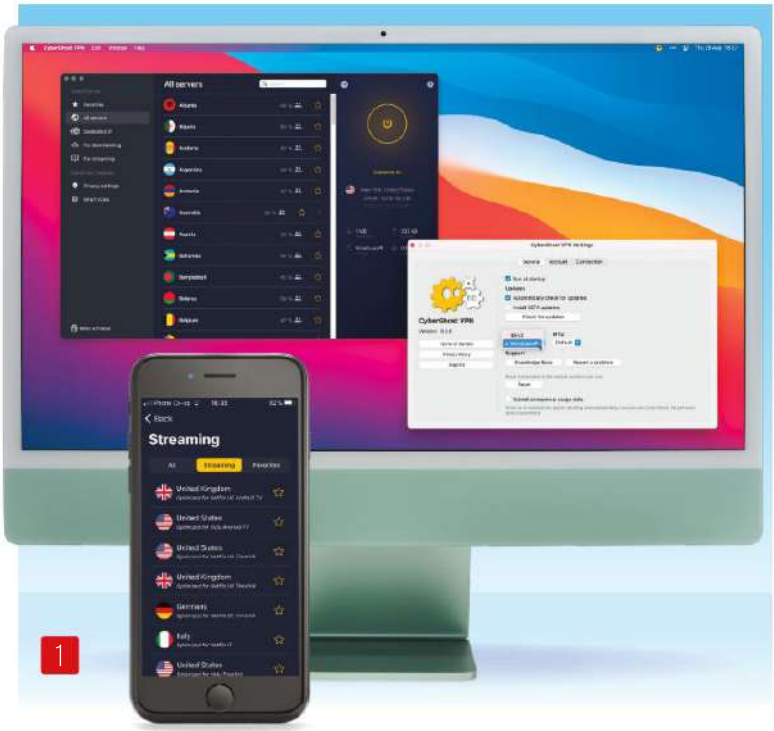
Things to consider...

1 No logs policy
› Read the VPN's privacy policy to confirm that it promises not to track individual behaviour. Also, does it allow independent security audits to back these claims up?

2 Multi-year discounts
› When you've found a service you like and trust, you can sign up for a longer period (one to three years) to save up to 85%.

3 Geo restrictions
› VPNs can trick web services into thinking you're in a different country. This enables you to access geo-restricted content such as media streaming services.

4 Performance
› If you enjoy streaming, gaming or P2P (Peer to Peer), check to see whether your VPN provider offers dedicated servers optimised for these kinds of activities to ensure performance isn't compromised.



CyberGhost VPN

› **$12.99** (about **£10.99**)/month › **FROM** cyberghostvpn.com

1 CyberGhost VPN is based outside the jurisdiction of the 14 Eyes in Romania. However, it concentrates the bulk of its 7,000 servers in the US and UK to improve performance when connecting locally, and 91 countries are covered.

The Mac app is simple to operate – basic controls are a simple on/off button and choice of favourite servers, but you can easily access a full country list. This reveals how many people are using the server, plus it can be filtered to show the best servers for streaming.

Only two protocols are supported on the Mac and iOS: IKEv2 (the default) and WireGuard. Performance-wise, CyberGhost VPN is firmly in the middle of the chasing pack, with performance dropping off markedly the further away you connect.

If you do opt for it, choose a multi-year subscription – not only do you get a good discount, but you'll also gain free access to the provider's more secure NoSpy servers.

› VERDICT
- ⊕ Wide range of servers
- ⊕ Simple to operate
- ⊖ Average performance
- ⊖ No privacy audit completed

★★★☆☆

ExpressVPN

› **$12.95** (about **£9.99**)/month › **FROM** expressvpn.com

2 Previously, ExpressVPN was out in a field of its own when it came to performance. While it's still lightning fast thanks to its new proprietary Lightway protocol, it's been caught by NordVPN. Nevertheless, it's still blisteringly quick, even when connected to some really far-flung servers.

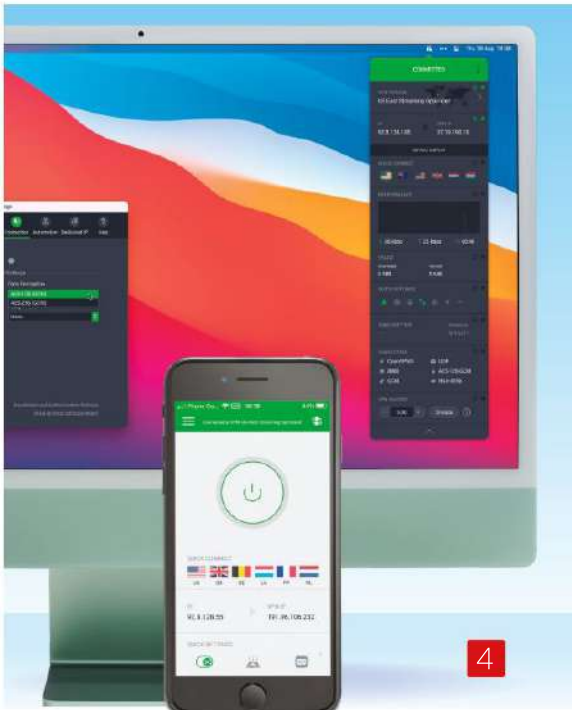
ExpressVPN's network is not the largest, but its 3,000 servers are spread across 94 countries and it's one of a few that works in China. It's also great for unblocking geo restrictions to enable you to stream a host of services, from Netflix to BBC iPlayer.

The interface can be a little confusing as you need to open multiple windows to access certain settings, but the menu bar icon has a handy shortcut menu. The big downer is the price – even its yearly package is expensive – and the fact it only supports five simultaneous connections. But if performance and security are your thing, ExpressVPN is worth it.

› VERDICT
- ⊕ Second-fastest on test
- ⊕ Rock-solid security
- ⊕ Unblocks stream platforms
- ⊖ No major discounts

★★★★☆

› Image credits: CyberGhost SRL, Express VPN



NordVPN

› **$11.95** (about **£8.99**)/month › **FROM** nordvpn.com

3 **If you're looking for the best blend of performance, features, security and price, then NordVPN is the service for you.** Its new NordLynx protocol enables it to match ExpressVPN's performance both locally and when connecting to the other side of the world. And unlike ExpressVPN, NordVPN has some fantastic offers when you purchase a two- or three-year subscription.

In addition, NordVPN offers a host of useful features, including Double VPN, which adds another encapsulated layer of protection around your connection. And if the NordLynx protocol doesn't float your boat, NordVPN also supports OpenVPN and IKEv2.

NordVPN's server network is a little limited; although it has over 5,000 in total, they're concentrated in just 56 countries. It's also planning to move all its servers to its own physical infrastructure rather than renting space elsewhere.

› VERDICT

- ⊕ Fastest performance on test
- ⊕ Strong security features
- ⊕ Outside 14 Eyes jurisdiction
- ⊖ Only 56 countries covered

★★★★☆

Private Internet Access

› **$9.95** (about **£7.99**)/month › **FROM** privateinternetaccess.com

4 **If transparency is your thing, then Private Internet Access may be for you.** Its entire code base is open-sourced to make it easy to audit, which explains why it only supports the WireGuard and OpenVPN protocols (defaulting to the latter at 128 bit.)

PIA has a reputation for excellent performance, but in our tests it was among the also-rans, lagging some way behind the top performers. It does, however, offer a slick, simple interface accessible from the menu bar that can unfold to reveal all kinds of useful stats and settings.

It also offers a generous 10 simultaneous connections – only Windscribe's unlimited option beats it – and you can road test PIA on your iPhone for up to seven days. Sadly, the Mac version offers no such trial. It does offer deep discounts for even a single year's subscription $3.33 (about £2.50)/month) – though, making it one of the most affordable on test, so you do get value for money.

› VERDICT

- ⊕ Very privacy focused
- ⊕ Great value for money
- ⊖ Within 5 Eyes jurisdiction
- ⊖ Not the quickest

★★★☆☆

› **Image credits:** ExpressVPN, NordVPN.com, Private Internet Access Inc

TunnelBear

› **$9.99** (about **£7.99**)/month › **FROM** tunnelbear.com

5 **If you're looking for a simple, no-fuss VPN then TunnelBear should appeal.** Its cutesy bear highlights its beginner-friendly appeal, but don't worry – it's still both private and secure, backed up by a thorough privacy policy and several detailed independent security audits.

In terms of features, it's a little light compared to others, and only supports the OpenVPN protocol, which is reflected in its performance, which was at the bottom end of those tested. It operates a relatively small number of servers – just 2,600 spread across 41 territories.

TunnelBear does have one clever feature not found elsewhere – GhostBear is an option to try to hide the fact you're using a VPN but is only recommended if your ISP blocks your VPN connection because it'll slow things down even further.

TunnelBear's free 500MB monthly allowance is just enough to check it works, but there are good multi-year deals to be had.

› **VERDICT**

- ⊕ User-friendly
- ⊕ Free 500MB package
- ⊖ Only supports OpenVPN
- ⊖ So-so performance

★★★☆☆

Windscribe

› **$9** (about **£6.99**)/month › **FROM** windscribe.com

6 **If you want a free VPN for semi-regular use, it's hard to look beyond Windscribe and its generous 10GB monthly allowance.** You're limited to a small selection of its total number of servers in 10 countries, but it's great for occasional use.

The Pro version opens this up to 60 countries and 110 distinct cities, and there are no restrictions on how many devices you connect with too. You also have a choice of protocols: IKEv2 (default), plus OpenVPN, and WireGuard. Performance-wise it's comparable with TunnelBear and PIA.

The interface is a little fussy but is self-contained within a single window. Windscribe proved less reliable connecting to overseas streaming services, with many spotting and blocking the VPN. On the upside, despite being within the 5 Eyes jurisdiction, Windscribe's privacy policy makes it clear it keeps no personally identifiable information in its logs.

› **VERDICT**

- ⊕ Generous free tier
- ⊕ WireGuard support
- ⊕ Dual VPN modes
- ⊖ So-so performance

★★★☆☆

› Image credits: TunnelBear LLC, Windscribe Ltd

Mac FORMAT BEST ON TEST

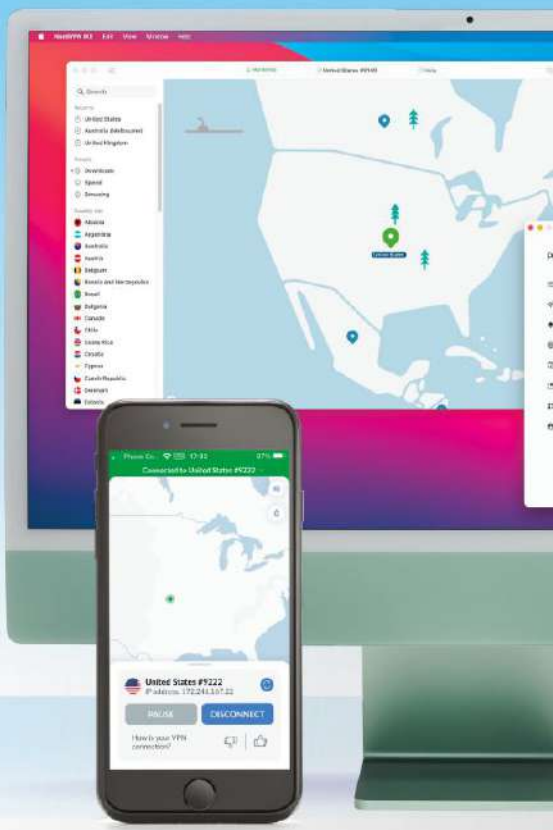
THE WINNER NordVPN

The best all-rounder excels in each key area – it's a safe choice

Each of the VPN providers on test here has its strengths and weaknesses, but NordVPN manages to produce the best overall blend – it's fast, secure and offers some deep discounts on multi-year subscriptions. ExpressVPN runs it close and edges it on the security front, but it can't compete on price.

The other four contenders can't match NordVPN's performance levels, but each has its own strengths: Windscribe is a practical option as a freebie thanks to its generous 10GB monthly allowance, while TunnelBear's simplicity will appeal to those who don't like fiddling with settings. We like Private Internet Access's commitment to transparency and its preference for open-source code and protocols, while CyberGhost VPN offers a wide range of countries and servers, and is incredibly cheap when you sign up for two years.

Ultimately, there's not a dud among any of these, but if you're looking for a VPN that won't compromise on performance while remaining both secure and affordable, it's hard to beat NordVPN.



How do they compare?

Specs	CyberGhost VPN	ExpressVPN	NordVPN	Private Internet Access	TunnelBear	Windscribe
Monthly price	$12.99 (about £10.99) per month	$12.95 (about £9.99) per month	$11.95 (about £8.99) per month	$9.95 (about £7.99) per month	$9.99 (about £7.99) per month	$9 (about £6.99) per month
Website	cyberghostvpn.com	expressvpn.com	nordvpn.com	privateinternetaccess.com	tunnelbear.com	windscribe.com
Free/trial?	7-day trial, iOS only	7-day trial, iOS only	No	7-day trial, iOS only	500MB free/month	10GB free/month
Blocks ads	Yes	No	Yes	Yes	Yes	Yes
Simultaneous connections	7	5	6	10	5	Unlimited
No of countries	91	94	60	78	41	63 (10 free)
No of servers	7,300	3,000	5,200	Not disclosed	2,600	(110 locations)
Overall	★★★½☆	★★★★½	★★★★½	★★★½☆	★★★½☆	★★★½☆

Note: The final verdict scores reflect the overall opinion of a product and are not necessarily an average of the criteria listed in the table.

Image credits: CyberGhost SRL, ExpressVPN, Private Internet Access Inc, Windscribe Ltd, NordVPN.com, TunnelBear LLC, Windscribe Ltd

Camera+ Studio

Develop Raw files with precision in this slick digital darkroom

› **£16.99** › **FROM** LateNiteSoft, latenightsoft.com › **NEEDS** Requires macOS 11.1 or later

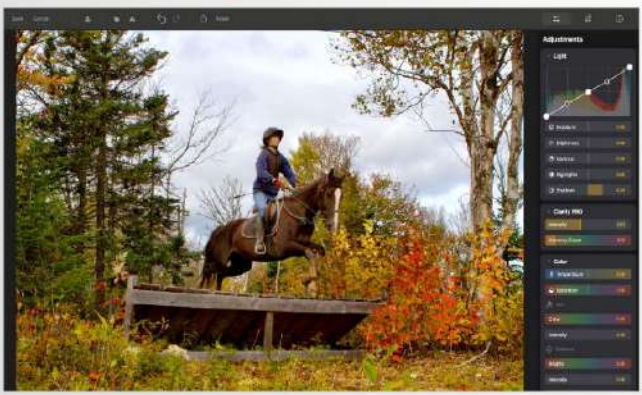
Clarity PRO enables Camera+ Studio to reveal detail without exaggerating existing noise

Camera+ Studio is the macOS sister app of the popular iOS app Camera+ 2. Camera+ 2 is a camera and digital darkroom combined, whereas macOS Camera+ Studio focuses on editing your photos' colours, tones and composition.

As it can be a fiddle to edit Raw files on the go via the iPhone's comparatively small display, Camera+ Studio gives you access to a suite of Raw editing tools from the comfort and convenience of your Mac's larger screen (and it will of course edit JPEG and HEIF files too).

Before we delve into detail on Camera+ Studio's editing features, it's worth looking at the overall Camera+ workflow. Once you snap a shot using Camera+ 2 on your iPhone, you can edit and share it from within the Camera+ 2 app, or save it to the iPhone's native Photos app. If you sync your pictures between your iPhone and Mac using iCloud, you can view your Photo Library (including all your albums) directly from within the Camera+ Studio workspace. Select a photo, edit it and the changes will be saved to your Photos Library. Once the edited shot has been synced via iCloud, you'll be able to view it (and continue editing it if required) in the Photos or Camera+ 2 apps on your iPhone.

So, how does Camera+ Studio shape up when it comes to editing? As with the macOS Photos app, Camera+ Studio offers a one-click auto fix tool that uses machine learning to analyse a photo's problems with colour and exposure and then fix them. When applied to a backlit test image the Photos app's auto fix Magic Wand tool revealed some colour and detail in the underexposed foreground. Camera+ Studio's auto fix tool fared less well and actually darkened the already under-exposed shadows. This isn't a big deal as most pro photographers avoid an auto fix approach anyway, preferring to use adjust the shot manually via sliders.



The Clarity PRO panel quickly creates a print with more punch by revealing detail and creating vibrant colours.

The versatile Curves tool enables you to make selective tonal adjustments with precision.

As with the Photos app, Camera+ Studio offers sliders designed to target specific tones to selectively reveal shadow detail without blowing out brighter highlights (or claw back highlight detail without darkening shadows). Using these selective sliders, we were able to give our test image a more balanced exposure in both Photos and Camera+ Studio. To tease out delicate texture and detail, Camera+ Studio's Clarity PRO slider worked well. It also performs a vibrance boost at the same time to make weaker colours look stronger. The Photos app's Definition slider performed a similar change when applied to our test image, but it added more noticeable particles of digital noise to the sky than were present in Camera+ Studio's

The Duotone panel lets you tint shadows and highlights separately for creative looks.

edited version. Picture noise isn't that noticeable if you're editing shots to be displayed on an iPhone via social media, but for professionals wanting a larger, high-quality and noise-free print, Clarity PRO gives Camera+ Studio the edge in this area. Although Clarity PRO does a good job of enhancing detail without adding noise, we were disappointed that it was lacking the extra colour and luminance noise reduction options that are present in the iOS Camera+ 2 and macOS Photos apps.

Extra tricks and features

Although Camera+ Studio lacks the Photos app's versatile Black & White panel, it does have an extra trick up it sleeve in the shape of the Duotone panel. This enables you to add separate washes of colour to a shot's shadows and highlights to produce creative two colour (duotone) images. As well as editing colour and tone, Camera+ Studio has a Crop and Straighten panel that counteracts tilted horizons and helps you improve composition. As with the Photos app, this workspace offers preset crop sizes so you can create a shape that suits a particular picture frame or social media site. However, when applying crop presets to our vertical portrait-oriented shot, we found that the image was cropped to a horizontal landscape shape. It also zoomed in on the image, making it difficult to view and recompose its content. Camera+ Studio lacks the crucial portrait or landscape icons that let you decide to crop in either a vertical or horizontal aspect ratio. LateNiteSoft is planning to introduce new features to the app in due course, so hopefully this cropping oversight will be corrected too.

You can download and experiment with Camera+ Studio for free, but to be able to save edited files and uses Curves and Clarity Pro you'll need to subscribe for £0.79 per month or buy it outright for £16.99.

The iOS Camera+ 2 app gives you much more control over your iPhone's camera than the native Camera app so it's a great addition to your toolkit. It also boasts powerful picture editing tools that outperform those in the iOS Photos app. However, in general the macOS Camera+ Studio app doesn't eclipse macOS Photos when it comes to editing images. Indeed Camera+ Studio lacks the Photos app's ability to retouch a shot to remove unwanted objects. It also lacks the option to compare before and after images to see how your edits are shaping up.

If Camera+ 2 is already your iOS camera of choice, Camera+ Studio will be a welcome addition, especially if you prefer to edit on a Mac's larger display. **George Cairns**

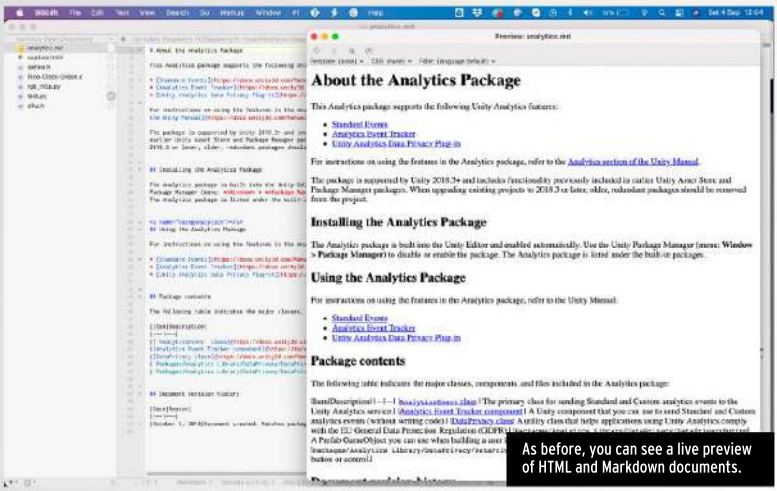
Mac FORMAT VERDICT

› Doesn't offer much more than the Photos app, but worth taking for a free test drive if iOS Camera+ 2 is part of your workflow.

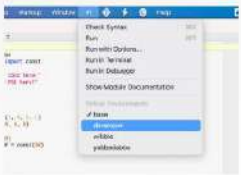
★★★☆☆

⊕ Clarity PRO
⊕ Duotone tools
⊖ No before-and-after view
⊖ No portrait crop preset

› Image credit: LateNiteSoft



As before, you can see a live preview of HTML and Markdown documents.



You can easily switch between Anaconda virtual environments from the shebang menu.

The new Notes feature saves and titles your notes automatically, gathering them in a notebook.

BBEdit 14

The venerable text editor adds some notable new features

› **$49.99** (about **£36**) › **FROM** Barebones, barebones.com › **NEEDS** macOS 10.14.2 or later

Mac FORMAT ★★★★★ EDITOR'S CHOICE

Mac FORMAT VERDICT

› It may be nearly 30 years old, but BBEdit just keeps on getting better.

★★★★★

- Convenient new Notes feature
- Built-in support for LSP
- Adds more coding languages
- Supports Anaconda Virtual Environments

Are you one of those busy people with a desktop littered with countless unsaved, untitled text notes? The latest version of BBEdit comes with a new Notes feature that will not only save notes automatically, but also title them based on the first few words. It keeps notes together in a 'notebook' so it's much easier to find the one you need. Notes can later be 'promoted' to text documents or exported as Markdown files.

While BBEdit started back in 1992 as a barebones text editor, it has accumulated a whole bunch of advanced features since. The more recent editions have focused on easing accessibility to unlock its full power. BBEdit 12.5 added a Lorem Ipsum dummy text generator along with the Commands search feature, while 13's additions included a Pattern Playground sandbox for experimenting with grep patterns.

Advanced developer features

Further aiding ease of use, BBEdit 14 introduces a Repeat Command option (with ⌘+Y keyboard shortcut) to quickly repeat the last command. The Clipboard window has also returned, enabling you to cycle through previous clipboard entries. You can even create a new note from the clipboard contents. For programmers, the biggest news is the inclusion of built-in support for the Language Server Protocol (LSP). This provides enhanced language-specific support to enable enhanced text completions, in-window highlighting of syntax and semantic issues, and assistance for specifying function parameters.

BBEdit 14 also adds built-in syntax colouring and function navigation support for Go, R, Rust, Lisp-family languages (Common Lisp, Scheme, Clojure), and Pixar Universal Scene Description (USD) text files. Data scientists are catered for with support for Anaconda virtual environments, detected using conda or miniconda. You can easily switch the active environment for use when running UNIX tools and scripts from within the app.

BBEdit remains a versatile text editor and Integrated Development Environment (IDE). A 30-day trial period enables you to retain all but the advanced features afterwards if you decide not to purchase. **Phil King**

›Image credit: Barebones Inc

Baldo: The Guardian Owls

A winning fantasy formula

› **£4.99**/month (Apple Arcade) › **FROM** NAPS Team, napsteam.com › **NEEDS** macOS 11 or later

Baldo's world looks stunning with the settings turned up to the max.

The puzzles are one of the game's best elements as they are inventive and varied

Apple Arcade has been a bit of a mixed bag so far, where even the best games on iOS do not always shine on the Mac. Baldo is different, offering a charming fantasy adventure that really excels on desktop.

You play as the eponymous Baldo, a child who is catapulted from jolly country bumpkin to prophesised saviour in the opening two minutes of the game. You see, Baldo is a 'pure-heart child'. A prophecy tells that when someone like him is born, an evil 'no-heart' creature will begin to free itself from its underground prison, where it was incarcerated by a race of guardian owls many aeons ago. Before you know it, you're on a quest to find an ancient galleon, recover a mythical sword, and fight a powerful kraken. It's a real whirlwind opening.

Baldo is a game whose inspiration is immediately apparent. From the vivid music that narrates your adventures to the expansive world stuffed with puzzles, the DNA of The Legend of Zelda is all over Baldo. And that's a good thing, because Baldo pays homage to this fantasy favourite while carving out a niche of its own.

Boss battles are a real challenge with Baldo's low amount of health, but you'll get straight back on to the next!

The puzzles in Baldo are one of its best elements, which is just as well because the world is absolutely bursting with them. They are inventive and varied, so that you are kept on your toes whenever you face a new one. Balancing them is the game's combat, which is fairly simplistic but is meant to play second fiddle to the riddles and brainteasers. You will die a lot, and boss battles are very tough given how fragile your character is, but by the time you reach these fights you are so accustomed to dying that you'll be ready to go again every time you expire.

Easy on the eyes

Baldo backs up its pleasing gameplay with a striking graphical style that combines flat-colour comic-book characters with more detailed surroundings. It looks particularly gorgeous in the game's dungeons, where light and shadow combine so exquisitely that you'll often just stop and stare.

Every time you enter a new room or world space, the game is saved. You'll be glad for this thanks to the sheer number of deaths that will befall you, and not having to repeat much progress is a huge relief. We just wish Baldo would let you rotate the camera as you work your way through its world. Dungeons are so packed with props that at times your view is obscured, and it's a little galling when that leads to your untimely demise. It won't stop you enjoying this charming, entertaining adventure, though. It gives a novel twist to familiar fantasy tropes, taking what it learned from past greats and polishing them up for the modern era. If you like Zelda, you'll love this beautiful, creative adventure. **Alex Blake**

Mac FORMAT ★★★★★ EDITOR'S CHOICE

Mac FORMAT VERDICT

› Baldo will quickly become a favourite for anyone who loves the fantasy adventure classics.

★★★★★

⊕ Fun puzzles
⊕ Looks gorgeous
⊕ Large game world
⊖ Can't rotate the camera

› **Image credit:** NAPS Team

6 apps to help you study for success

Learn new skills and ace your exams with our top picks

Reviewed by **ALEX BLAKE**

Studying is a great way to learn new skills, change your career, and broaden your knowledge base. And as phones and apps become ever more important, the ways we go about studying are changing all the time.

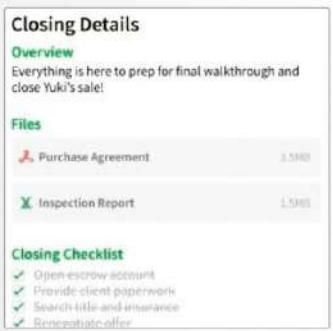
That's great news whether you're a full-time college student or learning at home in your spare time. With a few well-chosen apps, you can now make learning easier and more efficient than it has ever been.

We've trawled the App Store to find what we think are the best apps for studying. From planners and organisers to document editors and revision aids, these six apps will help you breeze through your studies. Check them out and head to the top of the class.

Forest – Your Focus Motivation

› £1.79 › **NEEDS** iOS 11 or later

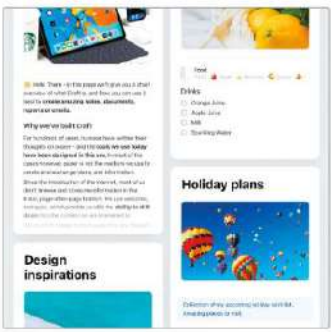
Concentration is vital to effective studying. Forest is your weapon of choice here, and its deceptively simple premise belies its powerful distraction-busting ability. Plant a tree at the start of your session and over time it will grow into a forest – provided you don't close the app. Use your phone, though, and the tree withers and dies. It's highly effective.



Evernote – Notes Organizer

› Free (IAPs) › **NEEDS** iOS 13.2 or later

When you're studying, you never know when or where inspiration might strike for your next piece of work. With Evernote, you can capture everything you need in a few quick taps. It's perfect for jotting down notes, capturing quotes, storing inspirational images, and much more. And everything syncs across your devices and calendars.

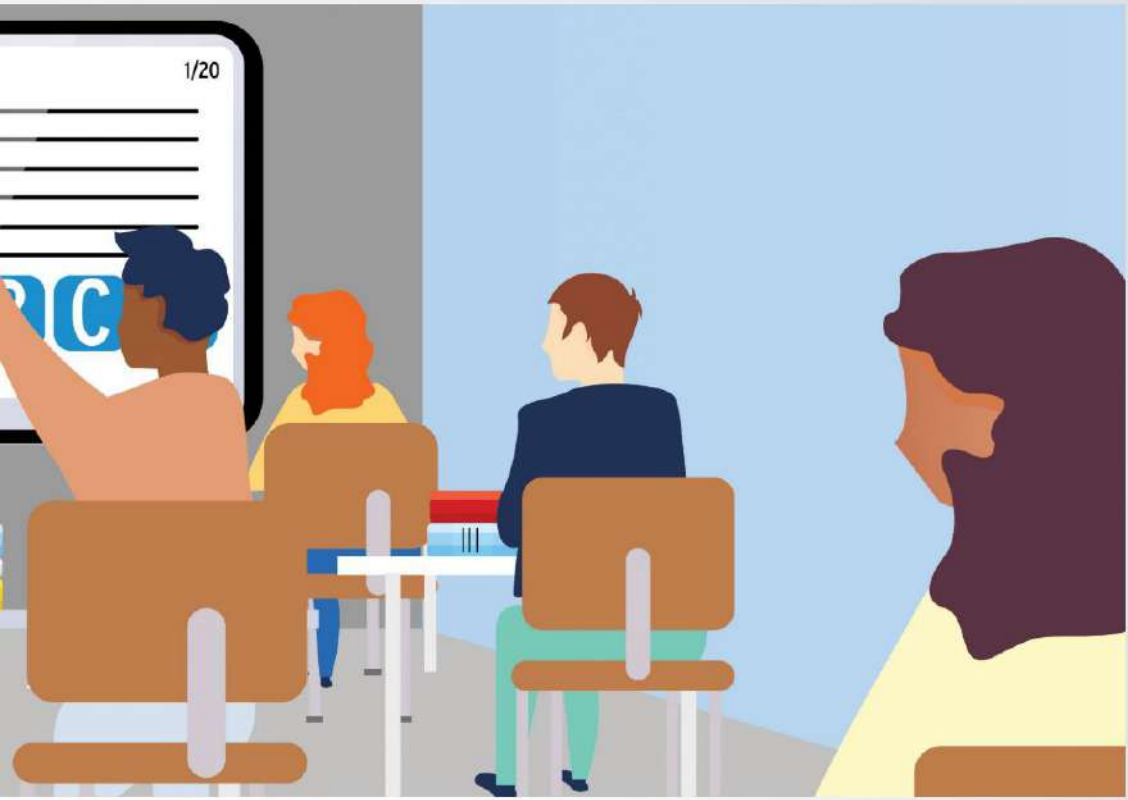


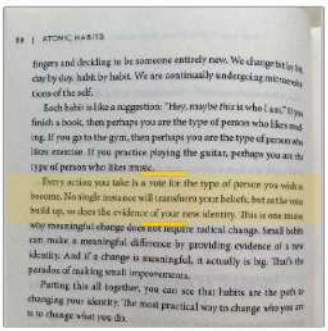
Craft – Docs and Notes Editor

› Free (IAPs) › **NEEDS** iOS 13 or later

When you're in the flow and working on an assignment, you need to be able to get your ideas down on paper quickly. Craft excels at that. It's a document editor that uses a block system for text, images, and more. Just drag and drop the blocks to rearrange your content, it's easy. It works on all Apple devices but excels on iPad – perfect for on-the-go studying.

› **Image credits:** SeekrTech Co Ltd, Evernote Corporation, Luki Labs Ltd

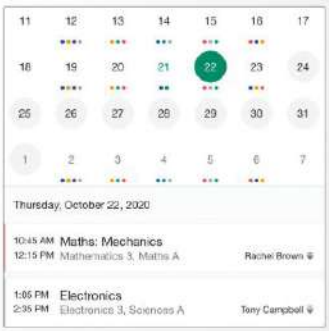




Highlighted: book highlighter

› Free › NEEDS iOS 14 or later

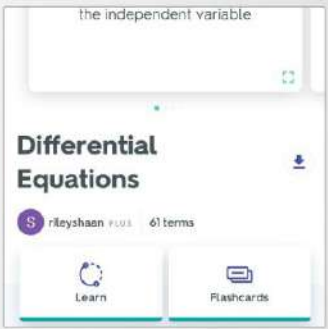
As a student, you're going to highlight a ton of notes, and keeping them organised can be a problem – but not with Highlighted. This app scans text from books and even photos, pulls out the text, then lets you highlight key passages. You can tag selections for easy sorting, search your saved passages, add notes, and export them to wherever you want.


11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30 31
1 2 3 4 5 6 7
Thursday, October 22, 2020
10:45 AM Maths: Mechanics
12:15 PM Mathematics 3, Maths A
Rachel Brown
1:05 PM Electronics
2:35 PM Electronics 3, Sciences A
Tony Campbell

My Study Life – School Planner

› Free › NEEDS iOS 11 or later

If you're studying on a structured course, you'll know how busy things can get. My Study Life is custom built, with a planner for your deadlines, exam dates, and classes. You can add revision notes, track your coursework, and view everything on a colour-coded calendar. Instead of using paper planners or several different apps, use this.



Quizlet: Learn with Flashcards

› FFree (IAPs) › NEEDS iOS 13 or later

It's one thing to go to lectures and write assignments, but another to ensure you've memorised everything you've learned. A flash card app like Quizlet is a great way to ensure success. Whether you learn with the app's flash cards, create your own, or use its various study games, it's the perfect way to cement your knowledge and ace your exams.

› Image credits: Damir Stuhec, My Study Life Ltd, Quizlet, Inc.

STORE GUIDE

EDITED BY **ROB MEAD-GREEN**

Your complete guide to the best Apple hardware and third-party accessories

EXPECTED AUG 2022
UPDATED APR 2021

iMac

From £1,249

Ever since the Bondi Blue iMac debuted in 1998, Apple's all-in-one desktop computer has been setting standards in gorgeous design and powerful performance. And Apple's April 2021 Spring Loaded event delivered the new, colourful 24in iMac, available in green, yellow, orange, pink, purple, blue, and silver. The larger screen has also been bumped up to a 4.5K Retina display with a 4480x2520 resolution.

Inside, Apple's own M1 chip combines with macOS Big Sur, and Apple promises up to 85% faster CPU performance and up to two times faster graphics performance than the 21.5-inch iMac models. All the models come with 8GB of unified memory (upgradeable to 16GB). The eight-core CPU/seven-core GPU option comes with a 256GB SSD (configurable to 512GB or 1TB). The eight-core CPU/eight-core GPU versions come with either a 256GB or 512GB SSD and can be upgraded to 1TB or 2TB.

The new iMacs all feature a 1080p FaceTime camera, a high-fidelity six-speaker system, a studio-quality three-mic array and support for spatial audio. You'll also find two Thunderbolt/USB 4 ports on each model, with middle- and high-end options gaining two additional USB-C ports. Thunderbolt 2, HDMI, DVI and VGA are supported using adaptors.) All come with a Magic Keyboard, with the mid- and high-end versions boasting Touch ID. Prices start at £1,249.

The 27in iMac, last updated mid 2020, sports SSDs across the line and you can choose from six-core tenth-gen Intel Core i5s on the entry level models, or an eight-core tenth-gen Intel Core i7. The 27in iMacs also boast AMD Radeon Pro 5300 graphics on the entry and mid-range models, and an AMD Radeon Pro 5550 XT GPU on the £2,999 model. All three models have 5K Retina displays with True Tone. You can add up to 128GB of memory and up to 8TB of solid-state storage.

The 24in iMac released in April brought with it a return of colour to the Apple spectrum.

Choose an iMac

	MODEL	KEY SPECIFICATIONS	PRICE
ENTRY LEVEL	24in, M1	**MEMORY** 8GB of unifed memory **GRAPHICS** Seven-core GPU **STORAGE** 256GB SSD **DISPLAY** Retina 4.5K (P3 gamut) **ALSO** Magic Mouse, Magic Keyboard	£1,249 R
UPGRADER	24in, M1	**MEMORY** 16GB of unifed memory **GRAPHICS** Eight-core GPU **STORAGE** 512GB SSD **DISPLAY** Retina 4.5K (P3 gamut) **ALSO** Magic Mouse with Touch ID, Magic Keyboard	£1,649 R
HIGH END	27in 3.8GHz eight-core Intel Core i7	**MEMORY** 8GB of 2,666MHz DDR4 **GRAPHICS** AMD Radeon Pro 5500 XT **STORAGE** 512GB SSD **DISPLAY** Retina 5K (IPS, P3 gamut) **ALSO** Magic Mouse, Magic Keyboard	£2,299 R

R = Retina display

EXPECTED OCT 2021
UPDATED NOV 2020

The MacBook Pro 13-inch (Late 2020) features Apple's own silicon 5nm M1 chip.

MacBook Pro

From £1,299

In November 2020, Apple rather surprised the tech world with an earlier-than-expected release of the first MacBook Pro with its own custom designed 5nm Apple M1 chip.

The eight-core CPU is said to offer 2.8 times faster performance over its predecessor, while the eight-core GPU has five times faster graphics. The 16-core Neural Engine completes the powerhouse spec sheet for advanced machine learning. All this, coupled with a 61W battery, translates to the longest battery life for a MacBook Pro so far, with an impressive 17 hours of web browsing and 20 hours of video play. The Pro comes with 8GB of unified memory but you can upgrade to 16GB. Storage starts at 256GB SSD, and can be configured up to 2TB.

The physical build remains the same as the May 2020 model (1.56x30.41x21.24cm), and still features the Magic Keyboard, Touch Bar, Touch ID and Force Touch trackpad. There are now two Thunderbolt/USB 4 ports. As well as Bluetooth 5.0, the 13in Pro now supports 802.11ax Wi-Fi.

13-inch model pricing starts at £1,299; while upping the unified memory to 16GB and opting for the top SSD storage of 2TB takes the price to £2,299.

So far, only the 13-inch model has been updated to the M1 chip, but the 16-inch is obviously due to follow. The 13-inch 2.0GHz Intel Core i5 Quad Core model with Intel Iris Plus Graphics, starting at £1,799, is still available. As are the 16-inch ninth-gen Intel Core models, which start at £2,399.

Choose a MacBook Pro

	MODEL	KEY SPECIFICATIONS	PRICE
ENTRY LEVEL	13in, M1 8-core CPU, 8-core GPU	**MEMORY** 8GB of unified memory **STORAGE** 256GB SSD **TOUCH BAR** Yes **TOUCH ID** Yes	£1,299 R
UPGRADER	13in, M1 8-core CPU, 8-core GPU	**MEMORY** 16GB of unified memory **STORAGE** 512GB SSD **TOUCH BAR** Yes **TOUCH ID** Yes	£1,699 R
HIGH END	16in 2.4GHz 8-core Intel Core i9	**MEMORY** 64GB of 2,666MHz DDR4 **GPU** AMD Radeon Pro 5500 4GB **STORAGE** 1TB SSD **TOUCH BAR** Yes **TOUCH ID** Yes	£3,799 R

EXPECTED DEC 2021

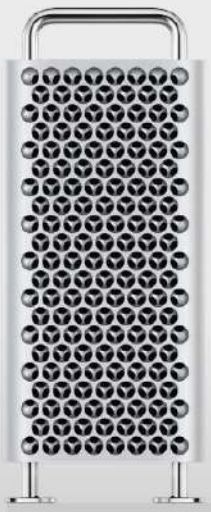
Mac Pro

From £5,499

Aimed at creative pros, Apple's high-end desktop has always been designed to deliver as much power and flexibility as possible.

Ironically, the previous 'trash can' Mac Pro proved to be a design dead-end, and so Apple came up with this: a stainless steel and aluminium tower that's almost infinitely configurable – you can even add wheels if you want to.

If the price at the top makes you wince, that's just the start – prices rise incredibly steeply once you get beyond the standard spec, and even those wheels will cost you £400, while adding six 128GB DDR4 EEC memory cards costs £14,000. Given that you can fit everything from a 28-core Intel Xeon W processor to 8TB of SSD storage that's hardly a surprise, though.



The new Mac Pro has been designed to be as configurable as possible.

EXPECTED OCT 2022
UPDATED NOV 2020

The M1-equipped MacBook Air (Late 2020) is an incredible portable performer.

MacBook Air

From £999

Apple's thinnest, lightest laptop now also gets the M1 treatment. But without a price hike! Prices still start at just £999. The next step model (with increased SSD storage and eight-core GPU) even costs £50 less at £1,249. Like the MBP, Apple's own unified memory silicon enables faster performance and better graphic speeds. And the 16-core Neural Engine results in nine times faster machine learning.

It may be Apple's most affordable laptop, but the MacBook Air certainly doesn't feel like a budget machine, thanks to its 100% recycled aluminium unibody, and 13.3-inch LED-backlit Retina display, which has a resolution of 2560x1600 (227ppi) and True Tone, which automatically adjusts the display's colour temperature depending on the ambient light.

The inclusion of the M1 chip has changed none of the Air's physical characteristics – the portable laptop is still just 1.61cm thin, and weighs 1.29kg. Despite the performance boost, the Air is now fanless, using an aluminium heat dissipating panel instead – which also means that it runs in complete silence.

The base model comes with an eight-core CPU, but a seven-core GPU, and 256GB SSD storage. While on the step-up model, the CPU and GPU are both eight-core, and the storage starts at 512GB. Both offer the option to upgrade to 16GB memory, and are configurable with increased storage; you can add up to 2TB of SSD storage for £800 on the base model or £600 on the eight-core GPU model.

The M1 MacBook Air can be teamed with Apple's Pro Display XDR, although none of the M1 Macs can be used with an external GPU (eGPU). You also get Touch ID for secure logins, and a Force Touch trackpad.

The MacBook Air is also equipped with two Thunderbolt/USB 4 ports and a headphone socket. The laptop now supports 802.11ax Wi-Fi (aka Wi-Fi 6), has Bluetooth 5.0 onboard, and is equipped with a 720p FaceTime camera for video chats.

So with the new internal upgrades, does the MacBook Air still boast its legendarily long battery life? Yes, and some! You can now get up to 18 hours of Apple TV app movie playback, or 15 hours of wireless web surfing, thanks to its 49.9W battery. Like the earlier 2020 incarnation, the new MacBook Air comes with Apple's Magic Keyboard for fast, fluid typing.

Choose a MacBook Air

	MODEL	KEY SPECIFICATIONS	PRICE
ENTRY LEVEL	13in, M1 8-core CPU, 7-core GPU	**MEMORY** 8GB of unified memory **STORAGE** 256GB SSD **TOUCH BAR** No **TOUCH ID** Yes	£999
UPGRADER	13in, M1 8-core CPU, 8-core GPU	**MEMORY** 16 GB of unified memory **STORAGE** 2TB SSD **TOUCH BAR** No **TOUCH ID** Yes	£2,049

EXPECTED OCT 2021
UPDATED NOV 2020

Mac mini

From £699

Despite a near two-year wait for the last update to the Mac mini, within just eight months, Apple released it again in November 2020 with the homegrown M1 chip.

The processor boasts far superior processing and graphics performance to the Intel innards of the previous incarnation. Like the MacBook Pro and MacBook Air, the base model starts with 8GB of memory that can be boosted to 16GB. The SSD options go from 256GB all the way up to 2TB.

The Mac mini now supports Wi-Fi 6 and Bluetooth 5.0. You get two Thunderbolt/USB 4 ports, as well as two USB-A ports, an HDMI 2.0 port and a 3.5mm headphone jack.

The entry level Mac mini is available for £699. Taking it to its max memory and SSD capacity will set you back £1,699. The 3.0GHz Intel Core i5 model is still available from £1,099.

EXPECTED APR 2023
UPDATED APR 2021

Apple TV 4K

From £169

Apple's media streamer has been around since 2007, and in April 2021 Apple unveiled the sixth generation. Running an A12 Bionic chip and its own OS (tvOS), the latest model offers 4K high frame rate HDR. You get Apple TV+, as well as access to third-party content using apps such as BBC iPlayer. You can also use it to play Apple Arcade games, run Apple Fitness+ content, stream photos and your music library, and more. The Siri Remote has been redesigned with an improved touch-enabled clickpad.

iPhone

From £679

In September 2021, Apple launched the iPhone 13 family of handsets. All four models boast many of the same features... Apple's A15 Bionic chip, Super Retina XDR screen with True Tone, Portrait mode, HDR video with Dolby Vision, 5G, Face ID, and Haptic Touch.

The Pro model has a 6.1-inch display, and there's a 6.7-inch screen on the Pro Max version. These two handsets boast LiDAR scanners and ProMotion tech, and 5-core GPUs. The Pro and Pro Max come in 128, 256, 512GB or 1TB storage options. While all the handsets offer a 12MP camera system, the Pro and Pro Max boast an additional Telephoto lens.

The iPhone 13 and 13 mini only come in 128, 256 and 512GB storage options. The display measures 6.1in on the standard handset, and 5.4in on the mini.

All the handsets are water resistant up to 6m and compatible with MagSafe.

Choose an iPhone

	MODEL	KEY SPECIFICATIONS	PRICE
ENTRY LEVEL	iPhone 13 mini (5.4in Super Retina XDR)	**CAPACITY:** 128GB **PROCESSOR:** A15 Bionic **FACE ID** Yes **CAMERA** 12MP photos (dual lens), HDR video	£679
UPGRADER	iPhone 13 (6.1in Super Retina XDR)	**CAPACITY:** 128GB **PROCESSOR:** A15 Bionic **FACE ID** Yes **CAMERA** 12MP photos (dual lens), HDR video	£779
HIGH END	iPhone 13 Pro Max (6.7in Super Retina XDR, ProMotion)	**CAPACITY:** 1TB **PROCESSOR:** A15 Bionic **FACE ID** Yes **CAMERA** 12MP photos (triple lens), ProRes video	£1,549

iPad

From £319

This autumn, Apple brought out the ninth-gen iPad 10.2in featuring an A13 Bionic chip with Neural Engine and a 20% faster GPU. The front-facing camera finally incorporates a 12MP Ultra Wide lens, with support for Apple's new Centre Stage feature, and the display boasts True Tone technology.

The iPad is great at multitasking. You can slide a second app over the right side of the one you're working on. Picture in Picture enables you to watch video in a corner of the screen. There's also Split View, which lets you work on two apps side by side. iPad also supports external drives and, since the iOS 14.5 update, Xbox Series X and PlayStation 5 DualSense controllers for more immersive gaming.

The new iPad comes in 64GB or 256GB options. Now only available in Silver or Space Grey.

Choose an iPad

	MODEL	KEY SPECIFICATIONS	PRICE
ENTRY LEVEL	10.2in iPad	**CAPACITY** 64GB **PROCESSOR** A13 Bionic **CONNECTIVITY** Wi-Fi **CAMERA** 8MP **UNLOCKING** Touch ID	£319
UPGRADER	10.9in iPad Air	**CAPACITY** 64GB **PROCESSOR** A14 Bionic **CONNECTIVITY** Wi-Fi **CAMERA** 12MP **UNLOCKING** Touch ID	£579
HIGH END	12.9in iPad Pro	**CAPACITY** 128GB **PROCESSOR** M1 **CONNECTIVITY** Wi-Fi **CAMERA** 12MP **UNLOCKING** Face ID	£999

iPad Air

From £579

There are changes aplenty for the iPad Air. The larger 10.9-inch Liquid Retina display also boasts slimmer bezels. You now get an A14 Bionic chip with Neural Engine for 40% faster performance. The device still uses Touch ID but has replaced the Lightning connector with USB-C. The device is compatible with the second-gen Apple Pencil and the Magic Keyboard with trackpad.

Watch

From £369 (Series 7)

The world's number one smartwatch now has a bigger, always-on Retina display.

Along with the two new size options (41 and 45mm), the Watch Series 7 has narrower bezels than before and even supports a full-size QWERTY keyboard as well as two new Watch faces.

Aside from also now boasting an S7 SiP, the Watch is otherwise largely unchanged from last year, sporting the same W3 and U1 chips, as well as an 18-hour battery life.

It also makes the most of new watchOS 8 features such as the new Mindfulness app, the redesigned Home app and other enhancements.

AirPods Max

From £549

Apple's rather expensive over-ear headphones are finally here. The aluminium cups rotate independently, the knitted mesh headband helps reduce on-head pressure, and the Digital Crown helps you to control your audio with ease. More importantly, the high-fidelity audio performance is exceptional, and the H1 chip uses computational audio to assist ANC and Transparency mode. In addition, spatial audio with dynamic head tracking ensures that the headphones deliver an immersive experience.

BEST BUYS... Curated picks of third-party kit

› DESKTOP SPEAKER
Ruark MR1
£329.99 ruarkaudio.com

› Winner of *MF357*'s head to head, the MR1 speaker set looks and sounds the business. The dome tweeter and long-throw woofer can handle a variety of audio styles with aplomb. You get a good variety of connectivity options, and we love the chunky function/volume dial too.

› QHD DISPLAY
ViewSonic VP2768a ColorPro
£379 viewsonic.com

› If you're looking for a screen for creative colour work, the 100% sRGB VP2768a ColorPro should be a definite contender. The frameless 27in 2K QHD display offers a 2560x1440 resolution, and a 14-bit 3D lookup table that generates 4.39 trillion colours. In terms of connectivity, there's an integrated gigabit Ethernet port, USB-C, USB3.2 Gen 1, HDMI, and a DisplayPort.

› PORTABLE SPEAKER
Sonos Roam
£159 sonos.com

› According to Sonos, this is its smartest speaker yet. You get Bluetooth and Wi-Fi connectivity, and Alexa and Google Assistant AI. The lightweight but rugged speaker's extensive feature list includes Sound Swap, throwing sound to the nearest Sonos speaker, and Auto TruePlay, where it automatically tunes itself to the environment. It also sounds great!

› IN-EAR WIRLESS EARPHONES
Sony WF-1000XM4
£250 sony.co.uk

› The WF-1000XM4 are slightly smaller than their predecessor and the case is 40% smaller – and more eco-friendly. The true wireless earbuds have a good audio ability, support voice-assistant control and the Headphones Connect app provides lots of customisation and ease of use. As well as LDAC, the WF-1000XM4 are compatible with SBC and AAC codecs.

› PRINTER
Epson Workforce WF-110W
£199.99 epson.co.uk

› Epson's Workforce WF-110W is supremely portable with an integrated rechargeable battery that has good longevity, plus there are flexible connectivity options and a nicely designed iOS app. The onboard screen and controls make setup and operation easy, and black-and-white print quality is excellent, with colour certainly acceptable.

NEW! › EXTERNAL SSD
OWC Envoy Pro SX SSD
£345.99 (1TB) owcdigital.com

› Our SSD top spot used to belong to OWC's FX version of this drive, but this cheaper model is also a tough cookie that offers excellent read and write speeds. It's IP67 rated so it's crush-proof, dust-proof, and waterproof and is plenty zippy in the file transfer department. The SX SSD is limited to Thunderbolt/USB 4 but you can always use it with an adaptor.

› KEYBOARD (MAC/iOS)
Logitech MX Keys For Mac
£99.99 logitech.com

› If you spend a lot of time at your desk, you'll know how imperative the right keyboard is. The MX Keys is full size with spherically dished, smooth-touch keys. The keyboard can pair with up to three Mac or iOS devices, and you can switch between them without having to re-pair. Battery life is good and the backlight is cleverly triggered by a proximity sensor.

› WI-FI ROUTER
Zyxel Multy U WSR30
£199 zyxel.com/uk

› Zyxel's Multy U mesh router hits the sweet spot, offering great performance at a competitive price, making it ideal for homes and small offices. The AC2100 router offers up to 280Mbps with a range of 6,000sq ft, and the nodes are easy on the eye, too. The companion app comes with helpful speed tests and diagnostic tools, as well as parental controls.

› MACBOOK BAG
Hex Technical backpack
$149.95 (about £110) hexbrand.com

› Looking for a bag that hits the sweet spot for generous storage and stylish looks? Look no further. The Hex Technical's 17.5-litre capacity is made up of device-hugging padded pockets for a MacBook (up to 16in), iPad, power bank and more. The bag is waterproof and has a 1680D Cordura ballistic bottom so it's also reassuringly rugged.

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BEST BUYS... Curated picks of additional apps

› PHOTO EDITOR (MAC)

Luminar AI

From £59 skylum.com

›If you want to improve your photos without spending too much, this is the app for you. If you're worried that you don't have the know-how for technical image edits, this is also the app for you! The software uses artificial intelligence (AI) to analyse your photos with templates for various categories, instantly enhancing your shot. And, once the AI has worked its magic, you can make your own easy tweaks.

› TO-DO (MAC/iOS)

Todoist

From Free todoist.com

›Task management apps should be clear and simple but with features on hand for you to be as productive as possible. Todoist provides that platform, and the Premium £3.99 tier in particular gets our vote. The interface is very easy to navigate and the comprehensive toolset is accessible crush-proof, dust-proof, waterproof without being overwhelming. The price includes both Mac and iOS apps, file

› PHOTO EDITOR (iOS)

Pixelmator

£4.99 pixelmator.com

›Pixelmator is a fully-fledged layer-based photo editor, graphic design and painting app. It offers over 100 brushes, dozens of tools and 32 blending modes giving you full control, all for a really affordable price. The app works with iCloud to sync all your projects across devices including Mac. It also supports formats like PSD, PNG and JPEG, making it the best app for all your graphic needs.

› TEXT RECOGNITION (MAC)

TextSniper

£6.99 textsniper.app

›Not only can TextSniper extract and recognise text from anything you see on your Mac's screen, it can do so very quickly. The app can handle just about any type of copy – be it a screenshot, PDF, scanned photo document, and so on. It's easy to use, works almost instantly, and we're really impressed with its accuracy. If you need a decent text recognition app, try this excellent affordable option.

› DISK UTILITY (MAC)

Carbon Copy Cloner 6

£29.45 bombich.com

›If you're finding Time Machine backups somewhat inflexible, look no further than CCC for your replacement. Carbon Copy Cloner 6's comprehensive feature set includes flexible backups, disk cloning and snapshot management. A help book is on hand which also links to the company's online Knowledge Base, so you're always assured of access to technical and specialist advice.

› CALENDAR & TASKS (MAC/iOS)

Fantastical 3

From £3.25 per month

flexibits.com

›If your calendar and reminders are getting out of control, Fantastical can sort things out. It has support for natural language entry, so you can enter events and reminders as you would say them. It's got a nifty menu bar shortcut, plus a great interface, clever calendar management and a powerful iOS app. Its predecessor won *MF338*'s group test.

› NOTE-TAKING (iOS)

Notability 10

£8.99 gingerlabs.com

›Notability is a very flexible note-taking app. It can combine different mediums, such as illustrations, handwriting and audio recordings, and import PDFs and scan documents. Version 10 also brings an in-house Shop for purchasing additional stickers, themes and features, such as handwriting conversion. The app works well with Apple Pencil and supports a range of cloud-based services.

› SCANNER/OCR (iOS)

Genius Scan+

£7.99 thegrizzlylabs.com

›Genius Scan uses your iOS device's camera and processing power to deliver comprehensive scanning and text-recognition capabilities. The free app (Genius Scan 6.0) provides document detection, background removal, distortion correction, as well as the ability to export to PDF and create multi-page PDFs, but the £7.99 Genius Scan+ (available as an IAP) introduces a superb OCR engine.

› EMAIL MANAGER (MAC/iOS)

Spark

Free sparkmailapp.com

›Feeling inbox anxiety? The solution could be Spark, our favourite iPhone email app after winning *MF340*'s group test. Its 'smart inbox' prioritises emails based on perceived importance – no more vital messages getting lost in a sea of spam. You can snooze messages to be reminded about them later, and search your mailboxes using natural language. And to top it all off, it's free.

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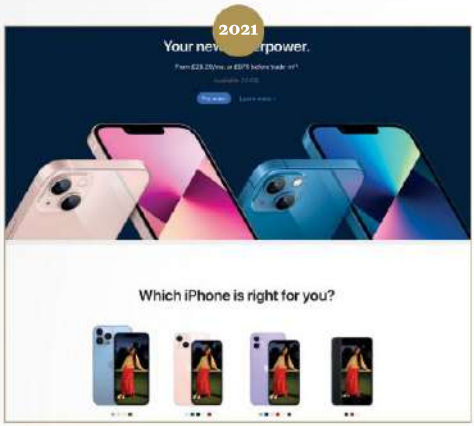
RANDOM APPLE MEMORY

The online Apple Store

It's easy to take the online Apple Store for granted, but as Charlotte Henry explains it was key to the company's resurgence



The original online Apple Store was unveiled on 10 November, 1997, alongside the PowerPC G3 chip, Power Mac G3 and PowerBook G3. That's nearly four years before the first physical store opened its doors. Not only did it give you a place online where you could buy products directly from Apple, that the company itself controlled, it played a key role in its revival after Steve Jobs' return.

Jobs was in typically combative mood when he announced the online Apple Store, telling the audience: "In 1996, Dell pioneered the online store and Dell's online store has become, up till now, the standard of ecommerce sites. We're basically setting a new standard for online ecommerce with this store... I guess what we want to tell you, Michael [Dell], is that with our new products and our new store and our new build-to-order manufacturing, we're coming after you, buddy." This was a riposte to Michael Dell's comments a month prior, in October 1997, when he jibed that he would "shut [Apple] down and give the money back to the shareholders."

The online Apple Store was a staggering success, bringing in $12 million in revenue in its first 30 days. Not bad, given Jobs had responded to executive Eddy Cue's original design for it by telling him: "This sucks."

In 2004, the Apple Store again received investment and there was a flurry of engineering activity aimed at improving it in the years that followed, including rearchitecting it in 2006-2007. Its role on the main Apple website has continued to change too, with the dedicated Apple Store tab appearing and disappearing at various points. And, of course, Apple also subsequently launched the handy on-device Apple Store app.

As with the physical version, the Apple Store online is about more than just retail. It now acts as a hub, enabling you to quickly communicate with specialists and get customer support. You can also access personal sessions online showing you how to use your new devices and 'Today at Apple' sessions took place remotely when the pandemic brought the in-person versions to a close.

ABOUT CHARLOTTE HENRY

Charlotte Henry is a journalist and author covering media and technology. Based in London, she is the UK Associate of The Mac Observer, hosts its Media+ podcast, and has written for various other outlets. Her first book, *Not Buying It*, was published in 2019.

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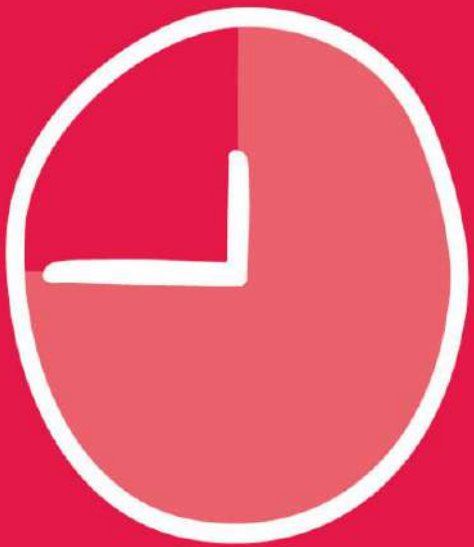

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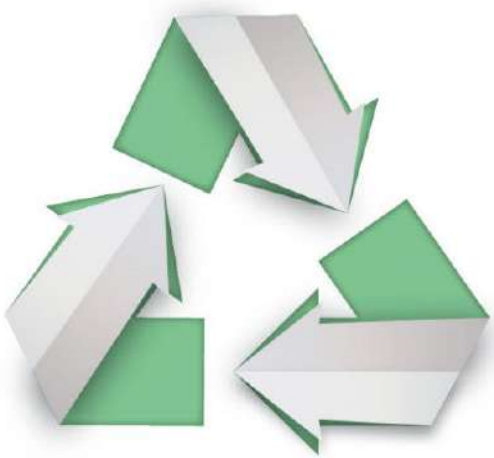

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